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CONTENTS

Education and Democracy	<i>G.W. Rama</i>	...	1
Indian Education : The Anti-Cultural-Involution	<i>Dinesh Mohan</i>	...	21
Institutional Quality, Student Input and Output: Analysis of Six Indian Universities	<i>M.A. Khader and Sushila Singhal</i>	...	35
The Higher Education Scene in Britain Today	<i>Asa Briggs</i>	...	47
The University as an Institution : Present Problems and Future Trends	<i>Dietrich Goldschmidt</i>	...	65
Notes from Research			
Social Costs of Reservation in Higher Education	<i>B.B. Chatterjee</i>	...	77
Student Evaluation of Instructors	<i>Christopher Orpen</i>	...	89
Participation, Faculty Satisfaction and Perceived Institutional Climate	<i>R.C. Srivastava</i>	...	94
Abilities and Subject Specialization	<i>J.K. Pillai and P.J. Gabriel</i>	...	108
Agricultural Research Service Scientists: Their Value Orientation	<i>R.K. Samanta</i>	...	114
Communications			
The Child Development Curriculum and its Relevance to the Job Competencies Expected in the Field	<i>Amita Verma and T.S. Saraswathi</i>	...	119
Over-crowding in University and College Hostels	<i>M.V. Soundara Rajan</i>	...	124
International Symposium on Problems of Development of Under-privileged Communities in the Third World Countries	<i>Sunil Misra</i>	...	131
Determinants of Levels of Higher Education in States	<i>S.C. Seddey and R.K. Gupta</i>	...	133

Book Reviews

Higher Education in the Third			
World : Themes and Variations	(I) <i>Amrik Singh</i>	...	145
by Philip G. Altbach	(II) <i>Krishna Kumar</i>	...	146
Technological and Social Complexity by	<i>Dipankar Gupta</i>	...	148
Maurice N. Richter			
Culture, Politics and Critical	<i>Buddhadeva Bhattacharyya...</i>		149
Academics by Asoke Basu			

Books and Journals Received

Our Contributors

Education and Democracy

G.W. RAMA

Liberal thinking introduced and developed systematically the problem of the relationship between democracy and the educational process. It did not, however, take up the subject of popular education – which, as will be seen later, originated with protestantism – but instead it emphasized a basic concern: that of forming the individual so he may fulfill himself autonomously. John Stuart Mill wrote: “He who lets the world, or his own portion of it, choose his plan of life for him, has no need of any other faculty than the ape-like one of imitation. He who chooses his plan for himself, employs all his faculties. He must use observation to see, reasoning and judgement to foresee, activity to gather materials for decision, discrimination to decide, and when he has decided, firmness and self-control to hold to his deliberate decision”.¹

This concept of the individual, defined as a free entity in the face of society and power, finds its expression through two interconnected categories: the citizen and the pupil. The first, in order to emerge, requires a formation period, leading to the second category, which in turn is defined by the development of the intellectual and personality characteristics pointed out by Stuart Mill as indispensable for being able to choose.

Reason and freedom are the central concepts of liberalism. To affirm both presupposes denying the existence of *absolute truth*, presupposes that “human knowledge is never complete and is always fallible”² and therefore: “That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. He cannot rightfully be compelled to do or forbear because it will be better for him to do so, because it will make him happier, because, in the opinions of others, to do so would be wise, or even right.”³

The development of this view implies a high degree of confidence in human capacity for seeking truth and being free. The privileged instrument of reason is scientific knowledge, whose development is encouraged while at the same time the beliefs considered sacred and closed to all discussion are excluded. Orthodoxy is rejected for being "the grave of intelligence, no matter what orthodoxy it may be".⁴

Obviously the categories of citizen and educatee are, for liberal thinking, no more than abstract categories, construction as a projection of the bourgeois condition and unconnected with any specific class or power connotation. That is why the categories are concerned as independent of the conditions and the alienations to which the specific social groups are subjected.

This is not the place to ponder the social counterpart left out by liberal thinking. What is relevant for our purpose is to underline a critical attitude, the sense of doubt and conflict of opinions in the making of knowledge.

Classic Marxist thinking continues the Enlightenment tradition around the two keys of reason and freedom but de-mythifying them, showing on the one hand the ideological character and the limitations imposed on reason in the bourgeois society and, on the other, considering the problem of freedom within the widest framework of the relationship of man to his work, bringing into focus the alienations existing at this level.

Gramsci, on dealing specifically with the problems derived from the relationship between culture and school organization, showed that the practice of dividing education into classical and professional is the way to impose a form of segmented socialization: the ruling classes and the intellectuals have access to the former while the lower classes are the recipients of the latter. In this sense, the spread of mass education had instrumental purposes: to prepare skilled manpower according to the new requirements of the production apparatus and to reproduce the class situation. The object of this unequal education—one for dominating and the other for accepting domination—is to legitimize and consolidate the working of the capitalist system. Rejecting these goals, Gramsci took up again the subject of political formation and proposed the unitary school, which combines intellectual work with manual labor, scientific and technical practice with humanist formation": "...it cannot only mean that an unskilled laborer could be converted into a skilled worker but that every 'citizen' could become a 'ruler' and that the society could place him, even 'abstractly' in general conditions to be so: political democracy tends to make the rulers coincide with the ruled (in the sense of government with the agreement of the governed) ensuring for all the governed free apprenticeship of abilities and of general technical preparation, necessary for this purpose".

For Gramsci, the most suitable way of breaking the oligarchic school consisted of replacing it by the single school (elementary-secondary)"...which takes the child up to the very threshold of professional choice and, at the same time, forms him as a person able to think, to study, to direct or control those who direct".⁵ As the key factors in education, he pointed out the ability to think and to control those who direct, and here his thinking is connected

with one of the dimensions of liberal thought. From there on, his purpose was to find the education principle which could accomplish the same function in a school inserted in an industrial, class-structured society.

Without diminishing the role of the intellectuals connected to the party and organically integrated with the working class as the generator of a new cultural model, it is evident that Gramsci relied heavily on the objective capacity of a rationalist school which teaches how to think. This was so clear that his greatest fear was that the participation of the masses in the secondary school might tend to relax the discipline of study, which he considered fundamental if the children of the working class were to be able to compete with the children of intellectual families, better prepared for school work. We know today, however, that the unitary school is far from being a panacea in relation to the class system. We also know that the mechanisms of reproduction through which the *status quo* is maintained are complex and resist fairly successfully the attempts to modify the social structures by starting with changes located in the educational system. The old illuminist ideas which Condorcet developed in his *Sketch of a Historic Tableau of the Progress of the Human Spirit* continue to inspire educational proposals.

There is room, however, for doubt. Is it possible nowadays to keep on taking for granted those immanent relationships between reason and freedom? Wright Mills reviewed the history of confidence in reason as a liberating instrument. In Marxist thought, the revolutionary change would take place when men had access to class consciousness; in Freudian thought, when reason could reveal the individual biography; in liberalism, when reason is spread throughout the society. At the present time, says Wright Mills, "... increased rationality may not be assumed to make for increased freedom". "Great and rational organizations—in brief bureaucracies—have indeed increased, but the substantive reason of the individual at large has not. Caught in the limited milieu of their everyday lives, ordinary men often cannot reason about the great structures—rational and irrational—of which their milieu are subordinate parts".

Rationally organized social mechanisms—such as the State and the great corporations—whose activity is subtracted from the participation of producers and politicians, constitute authoritarian domains. These domains are ordered according to a technocratic rationality—a social non-rationality—which hold the means of 'convincing' of manipulating or of coercing. They attempt to condition people in such a way that they do not make history and "...they tend increasingly to become the utensils of history-makers and also the mere objects of history-making".⁶

It is not our intention to present a fatalistic, 'Orwellian' picture, but instead to emphasize the new contradictions: high instrumental rationality versus lack of freedom and minimum societal rationality; great concentrations of economic and political power versus social groups excluded from decision-making; complexity of institutions and policies manipulated majorities which lack information and alternative proposals; esoteric, 'explanations' about policies presented as if they were founded on an alleged

technical reason which the layman, the idiot in the literal Medieval sense, cannot even attempt to understand; complexity and high specialization of scientific knowledge versus the few years' education received by the majority of the population. We should not omit either the alienations which the technical bodies generate in the common man by convincing him that he cannot by himself solve even the problems intimately connected with his personal existence and that he depends on the array of specialists capable of solving them. Cases in point are the educator who explains to the parents that "they do not know how to educate their children"; the analyst without whose intervention the individual psychic problems are unsolvable, and so on.

Faced with this state of affairs, the role of education as a social condition of the functioning of democracy becomes very complicated. It is not enough to fight for making basic education universal, or to ask for more democratic access, or to regard education as a neutral milieu in which personality develops at the margins of power, class and ideology contradictions in society. External conditions are key prerequisites of the educational process but the substance of the knowledge which is transmitted, the way in which the reasoning ability is developed and the authoritarian or democratic nature of the pedagogical relationship increasingly become the sensitive mechanisms through which both conformism and freedom to participate in a substantially democratic society are processed.

I

The foregoing reflections have a universal character. They are intended as a reference frame for the specific historical evolution of education in Latin America and will allow us to focus on the relationship of some fundamental traits of the present educational system to the contemporary social structures of the region.

(1) The formation of many Latin American societies was based on the exploitation--discrimination of the native population; or of the Africans introduced as slaves into countries which, like Brazil, maintained slavery until almost the last years of the nineteenth century.

If violence was the typical social form of domination, cultural discrimination was the marginating mechanism of the indigenous sectors. More than four centuries after the Conquest, vast communities still remain with their culture split between "a time of the ancestors (which) represented order and measure" and a "present time (which) can only be a *mad time*".¹ The Iberians and their descendants, on monopolizing the dominant language and denying social value to the dominated language, put into effect an important mechanism for controlling mediation, were conscious that any integrating channel would be able to create a type of acculturation which would not only develop contents for a new identity, but also a capacity for resistance. In this connection, a Royal Order warned that "...the establishment of schools in the towns may bring pernicious consequences and the Indians should only be instructed in Christian doctrine, since any other

teaching is very dangerous, inasmuch as ever since the Conquest it would appear that there has been no revolution by these natives which did not proceed from someone with more instruction".⁸

At the present time, in Andean and Central American countries, teachers impart the first lessons to indigenous children who attend school with the help of an older child who is used as a translator...It is not surprising, therefore, that the indigenous population, whose size is not by any means negligible, continues to be marginalized in Latin America.

(2) In most of the countries of the region throughout the independent political life and up to the first post-war years, the dominant classes chose to keep the masses excluded from education, particularly in rural areas. The coercive mechanisms of power imposed an authority which was maintained through internationalization of submissive behavior, a result of highly personalized dependency relationships.

The history of the spread of literacy was very different in European countries and in nations originating in British colonies which have in common with the former the fact that they began the democratic experience at an early stage and have a record of greater institutional continuity".⁹ There, literacy goes back to the Reformation which maintained that "...the men of God should be instructed because they have to learn the Word of God on the printed page", a methodology used by the Counter-Reformation in societies where there were religious conflicts.¹⁰ Thus, between the sixteenth and the nineteenth centuries the ability to read and write spread in Europe, first in the urban centers and later on in rural areas, prior to any State intervention and before the qualification requirements arising from the industrialization process needs. For example, at the end of the eighteenth century in the North and North-Eastern region of France, close to 75% of the men signed their marriage lines; in Paris in 1847/48, 87% of the working men and 79% of the women workers knew how to read; in Germany in 1887 only 0.7% of the army recruits were illiterate; in 1900 in Belgium, 83% of the population between 8 and 15 years of age were literate. In England and Wales in 1901 only 1.4% of the men and 1.9% of the women did not know how to sign the marriage lines; in 1907 in Sweden, the number of illiterate conscripts did not exceed 0.3%. The scant data available show the opposite situation in Latin America. In Argentina illiteracy of the population over 14 years of age was 53.5% in 1895; Chile in the same year, it reached 68%; in Cuba, 43% of the population over 10 years of age; finally in Brazil, while it reached 41% in the Rio de Janeiro district, illiteracy was around 80% for the whole of the country in the second decade of the twentieth century.

In 1950, with the exception of Argentina, Costa Rica, Cuba, Chile and Uruguay, the illiteracy rate for the population over 15 years of age exceeded 30% in all the countries of Latin America, with percentages of 50% in Brazil and even higher in Central America.

In 1970 the five "privileged" countries had rates less than 10% while Colombia, Panama and Paraguay had less than 20%. The remaining countries maintained very much higher illiteracy rates (particularly intense in the case

of the age group 15-19) which in Brazil reached 24 %, and similar percentages were recorded in Central America. Although the rates were lower in other countries, still one out of every ten adolescents was illiterate in the region".¹¹

(3) Latin America shows the curious experience of 150 years of democratic attempts in illiterate societies. This contradiction was pointed out more than a hundred years ago by the great school reformers. Jose Pedro Varela said: "...the discrepancy which exists between the ignorance of the popular masses and the political institutions which apparently rule us is the efficient cause of the constant political crisis in which we live". He thus explained the persistence of the 'spirit of autocratic government' inherited from Colonial times.¹²

The countries which at an early stage began a policy of popular education followed a national integration project which proposed to lay the bases for a participatory political system. The same objective explains the recent educational processes in societies such as Peru or Venezuela.

While in Europe literacy preceded State educational action which completed the process, in Latin America it was the other way round. In Europe educational progress was parallel to the urbanization process, the market economy, the change from a rural condition to industrialization and the cycle of bourgeois and proletarian revolutions. In the Latin American countries which initiated the process it was, on the contrary, an *intentional* project of change. Moreover, since the masses in Europe knew how to read and were able to have access to the various ideological messages, institutional action was essential for controlling socialization in the values of the dominant class. But in Latin America the means for controlling ideological influence and social mobilization was illiteracy. Finally, since the educated portion of the society was so limited in Latin America, the weak State initiatives were immediately monopolized by the upper and middle social groups, strengthening the links between education and privileged status.

In fact, the beginning of large-scale primary education occurred in Latin America after the crisis of the oligarchic regimes and specifically with the populist governments that arose in the stage of import substitution industrial expansion and out of the impact of the first urbanization. But while populism organized a better distribution of goods and attempted to reduce the existing cultural gap, it established at the same time a mediated political participation. In Argentina, as Gino Germani pointed out, the "political integration of the masses was begun under the sign of totalitarianism which was able to provide, in its own peculiar way, a certain experience of political and social participation in the immediate, personal aspects of the worker's life, while eliminating at the same time the political organization and basic rights which constitute the irreplaceable pillars of all genuine democracy".¹³ Thus there was all over Latin America a contradiction between charismatic patterns, extreme dependency and heavily anti-rational, liberticide messages and the expansion of educational opportunities for the masses. In some cases, the interplay of forces in the populist alliance led to entrusting the management

of education to the social groups which had most stubbornly opposed the values of reason and freedom.

(4) Industrialization in itself was not an efficient cause of mass education. During the first stage, linked to populism, when large numbers of workers were required, the need for skilled labor gave an incentive to primary education and training programs. The production of mass consumption goods required agrarian reform, which in the end did not take place. Instead, smallholding patterns persisted and agrarian capitalism was developed. In both cases the school was not an efficient means for training a notorious surplus of manpower. As a consequence, the rural school vegetated until the time when the rural-urban migratory flow imposed a demand for literacy and minimum education for urban integration. It is important to note that the history of rural education was different in those societies or regions where the economy of exportable production was based on medium owners showing a clear relationship between family and enterprise and with limited availabilities of manpower for raising the value of the land. In these cases, educational progress was considerable and parallel to participation in the power alliances of these social groups.¹⁴

In the second stage, restrictive industrialization, with its characteristics of advanced technology and greater capital endowment, was no longer a growing employment market. Open unemployment, under-employment and the minimum income of the poorer half of the population were the central features of a development model based on concentration-margination, which requires a very centralized power system capable of controlling social demands in a compulsory way. Nevertheless, the non-manual sectors in occupations which may formally be considered as having medium status, continued to grow. The modernization cycle, the requirements of a wider market for durable consumption goods and the need for legitimizing power, are some of the factors which explain this expansion.

The expansion of the tertiary activities—the 'spurious' source which gave rise to them is not considered here—required a medium and higher educational formation which, as from 1960, acquired a rhythm of considerable growth, to a point such that in many countries of Latin America the gross rates of education at these levels exceeded those existing in European countries. However, it is not the demand coming from the production structure which generates that growth. The increments of the educational profile of occupations in the lower tertiary sector and in the secondary sector, should call attention to a phenomenon of over-education which cannot be absorbed satisfactorily by the occupations that theoretically would require an advanced educational qualification.¹⁵

The growth of the medium and higher educational level goes on to be determined by the rigidity of the economic structure which, although it allows the educational system to appear as the only possible channel of raising social status, introduces a mobile balance between education and employment so that each increase in the first is accompanied by requirements of greater educational qualifications on the part of employers. In this way,

the educational system, both as regards the social system as a whole and the different social strata, functions in accordance with a "running ahead" mechanism. So the system is legitimized by the expansion of the educational supply but when a lower group has access to primary education, the upper group is displaced towards secondary education and the next towards higher education. At the same time, continually higher formal educational levels are demanded in the labor market for the performance of the same jobs, with the consequence that while average school attendance has risen, the stratification is reproduced, maintaining the distance between the groups.

With regard to the democratic process, the educational expansion in recent years shows a series of singular characteristics:

- (a) High growth rates - located mostly at the secondary and university levels - are parallel to the persistence of illiteracy and incomplete primary schooling of large masses of the population.
- (b) Educational expansion does not respond to the requirements of the economic system. It points, rather, to the effort of the middle classes to overcome the existing structural barriers, in particular the contraction of the labor market.
- (c) Given the nature of the industrialization process which is dominated by the transnational corporations, on the one hand, and by low-level technology activities on the other, sufficient requirements of scientific training that act as external stimuli of academic development do not exist.
- (d) Nor was the educational expansion the result of a planned policy for cultural, democratic development but rather, as mentioned in (b) above, it was a reply to the social demands of the groups in a position to exert pressure on the power structure.
- (e) The expansion of the higher levels of education - in which by definition political formation is obtained - has been parallel to the emergence of regimes which are limitative or regressive as regards social participation.

II

In the present transition stage of Latin America, the societies of the region are experiencing a high degree of contradiction and antagonism. The confrontation over the development model and the patterns of income distribution have been the cause of important conflicts in which power, in many cases of a heavily repressive nature, has been faced with significant social mobilization. In these societies an educational system with high rates of coverage and growth, especially in its upper levels, has been developed in response to the demands of certain social groups. This system stands in contradiction to the immediate requirements of the economic system and to the non-participatory, functional assumptions which would correspond to the development model.

What is the relationship between these phenomena and the constitution of a substantial, non-formal democracy?

An attempt will be made in the following pages to answer this question, linking the first inquiries about reason and freedom to the considerations put forward about the peculiarity of the educational process which characterized Latin America. The attempt will be limited to presenting problems and contradictions out of which some that the author considers especially relevant will be chosen for a more detailed treatment.

(1) *Access of the masses to traditionally selective education levels:* In the last three decades a considerable part of the population passed from illiteracy to the ability to understand a written language. While some took the first steps in a reasoning method in the primary school, large contingents of young people had access to secondary education, whose function was in theory that of cultural preparation. Finally, a very appreciable sector was enrolled in higher level education.

During the sixties, countries like Peru, Ecuador and Mexico reduced the illiteracy rate among young people in the 15-19 years age group from 26%, 21% and 25% respectively to 11%, 12% and 15%. In Argentina, Chile, Costa Rica and Uruguay, with percentages in some cases less than 4%, illiteracy became a residual phenomenon.

Primary education increased its coverage rates. Between 1970 and 1975 marked improvements began to take place in the output figures, although they are still far from being minimally satisfactory.

Gross coverage of secondary education shows important figures. Two out of every three persons between 13 and 19 enrolled in Uruguay; one out of every two in Argentina and Panama; one plus a fraction out of every three in Chile, Costa Rica, Peru, Venezuela and Mexico; one out of five in Ecuador, the Dominican Republic, Colombia, Brazil, etc.

The figures for higher education are no less surprising. Around 1975, enrolment as regards the 20-24 age groups of the population shows that there is approximately one student for every 4 young persons in Argentina; one for every five in Peru, Venezuela, Costa Rica and Panama (in descending order of coverage); one for every six in Chile and Uruguay; one for every ten in Brazil and Mexico and in the remaining countries slightly lower ratios.

Without embarking on an analysis of the quality and orientation of education, the mere quantitative fact has an enormous importance. The educational system is acting on part of the new generation whose demands in relation to the political system may become qualitatively different. It can at least be assumed that certain forms of manipulation proper to societies in the early stages of urban transition and having masses with a very low level of education -features which characterized many political processes of the immediate post-war years- are not applicable any more.

(2) *Polarized educational system without an integrating basis:* A brief outline of the region as a whole reveals that approximately one-third of the

younger generation remains illiterate or receives only incipient schooling. Another third is receiving basic schooling and the final third receives prolonged secondary and higher education.

Just as in employment studies an informal sector as opposed to the market sector was defined, so in education there is a similar marginalization. Important sectors of the society are excluded from the possibility of acquiring the minimum cultural formation necessary for becoming social actors. Cultural exclusion assumes greater significance when remembering, on the one hand, the growing social differentiation and the very limited value of literacy in a complex society and, on the other, the double exclusion which results if cultural deficiencies are compared with the levels reached by those sectors whose access to education is facilitated by their high socio-economic position. In this way, education reproduces the concentration-marginality development model, consolidating it throughout the life of a generation. The reproductive functions of education and their connections with the social class system acquire a very considerable significance because they go beyond what a capitalist class system as such would require. They show instead the persistence of the oligarchic model of exclusion and social control by means of the forced isolation of certain groups. Thus exclusion spoils the democratizing impact which the educational expansion of the medium and higher levels could have. That expansion is based, at any rate, on an initial educational adscription.

A policy aimed at achieving a minimum continuity between the different social classes should reverse the tendency which characterizes the development of education, covering the group prior to basic schooling and not to the subsequent one. This would allow effective democratization of access to basic education for the lowest social groups of the population. The lack of interest in pre-school attention clearly shows that the alleged democratization of social systems through education is only a spurious objective.

(3) *Cultural polarization and common political code* : The cultural distances existing between the rural and urban populations, as well as those between the urban semi-illiterates and the same generation with university studies, acquire an extraordinary dimension in Latin America : in the first place, because of the significance of the distance which, apart from not corresponding to two points on the same scale, refers to tangential cultural universes with codes of expression and thinking that have no mutual translation; further, because cultural positions do not share the informal culture which the historical process referred to earlier created in Europe for the whole of society; finally, because these distances are integrated with divergent stratification dimensions - race, language and group history - in some countries of Latin America.

The implications of the phenomenon in political communication are evident when considering how few organizations are able to combine workers

and peasantry with middle-class intellectual sectors, how repetitive are certain populist processes which expressly exclude and establish opposition to intellectual sectors and, finally, the tendency of political behaviors oriented towards social democracy and socialism to have very high correlation with education and a relatively low one with class situation.

Furthermore, it should be asked to what degree this blocked communication between the educated younger generation and its uneducated peers has influenced the tendency towards forms of direct action aiming at upsetting power systems violently instead of being dedicated to the political formation of the masses, whose main assumption is confidence in the capacity for communication between both sectors.

Finally, the means that power uses to establish authority differ according to the polarization. Methods based on traditional authoritarianism, on the handling of charismatic images and on client-oriented devices are frequent in relation to the lower groups. On the contrary, the educated groups demand rationality, some type of political project and a connection between the project and their individual situations. In summary, it would appear that the indispensable basis for a common political language does not exist.

(4) *Segmentation of the educational system*: Educational expansion without the parallel modification of the employment structure and the opening of recruitment channels of elites, have produced clashes between the meritocratic social selection function of education, the social origin of the students and the stratification of society. If the avenues of mobility theoretically offered by education are better than those admitted by the class and power system, two non-excluding alternatives are established: one, that the employment market, adopting criteria which are not those of mere educational degrees goes on to assume classifier functions in relation to entry into positions of unequal rank; second, that the education system is segmented in accordance with two criteria which are not necessarily overlapping: social class and knowledge — so as to link up through educational strata the positions which have status from the beginning and the equally hierarchical positions which exist in the social structure. In those societies whose recent, massive urbanization has altered recognition of the positions ascribed to class condition on the one hand and, on the other, the function of the family as transmitter of class consciousness, the educational system has increasingly been assuming this role.

More sophisticated forms which involve the public as well as the private sector and establish, from pre-school to university, compartmentalized socializations, have been added to the traditional rift between official and private education. In these forms, inequality in socio-cultural origin is amplified to such a degree that the result is glaring disparity between the scopes of cultural and ideological development.

The democratic objectives of egalitarian socialization and comparable education and the symbols of this neutrality (the white overall used as

school uniform, for example), the teaching profession conceived as a modern bureaucracy and recruited from people having similar formation and in accordance with universalist criteria, with rotation of positions throughout the career, are being substituted by the opposition between real educational centers and "day nurseries" for children and adolescents, between a scientifically-endowed, elite university and a university for the masses with low academic standing, a kind of refuge for a prolonged, frustrated adolescence.

(5) *Education of the masses without an explanation of the present and its collective actors* : The expansion of education took place offering basically the same education model of the elites to the masses though without its quality and its abundant cultural information.

The socialization of the elite through the educational system rested on several notions : (a) that the elite inherited a history of domination, so that the history taught to them was the product of privileged actors; (b) that there was no need to explain either the socio-economic structures or power because both dimensions were proper to the dominating position of their families; (c) that the present was the result of a historical process dating back to the colonial era, in which only the upper class had played a role; the masses were regarded as a resistance or a brake to the project of the elite, which was obviously accompanied by racist ideas in countries with indigenous population or in multiracially integrated countries.

On examining the textbooks of Latin American history, it is found that the educational discourse has changed very little. The dominated peoples exist only in relation to the poetic level of their originating cultures but without any influence on the present; the collective actors the worker, the peasant, the employee, etc. are not introduced as creators of history but as utensils. Historical narration is often interrupted towards the middle of the nineteenth century or it continues with a procession of presidents and outstanding personalities.

The absence of an analysis of present-day social structures follows from the non-existence of economic and sociological contents in secondary education, or from the pseudo-theoretical formalism. The most explicit result is that the students in the secondary school, as well as those who reach the University, are profoundly ignorant of the most essential aspects of the society in which they live.

The lack of formation is part of a conditioning which will make subordination plausible, leaving the generations unprotected and unable to establish connections between their own lives and the social structure. Nevertheless, it paradoxically creates a vacuum which is filled by concepts and ideologies that do not always coincide with the internalization and subordination purposes of the power elite.

(6) *Knowledge and degrees* : Educational expansion was accompanied by a profound deterioration of academic quality in the overall system of education.

In view of the low cultural level of the newly-incorporated primary and secondary sectors, it was found that : (a) apprenticeship in reading, writing and arithmetic techniques was not accomplished in the time theoretically assigned in the general programs; (b) in secondary education, the incorporation of scientific subjects required experimental methods and equipment which were not available due to lack of human and material resources; (c) the role of language, as linked with the explanation and interpretation of culture, was difficult to maintain. In this sense, teachers and students used a language poor in vocabulary and concepts. Moreover, they used the most direct sentences and the simple tenses (past, present and future) without incorporating the expressive richness of the conditional and the subjunctive. On excluding these sophistications of the Spanish language, teachers limited the capacity of the students for organizing their thoughts.¹⁶ All these problems were solved by taking the line of least resistance : automatic promotion in primary school and repetition by heart in secondary school.

On looking through the projects of secondary education reform in recent years in Latin America, one is surprised, on the one hand, by the lack of debate over the way to establish a cultural principle which would integrate education linking science and the humanities ; and on the other, by the non-existence of a systematic program of texts and teacher training, leading to the incorporation of the experimental method into education 'with its components of observation, hypothesis, judgment and reasoning.'¹⁷

Nor did systematic efforts exist which would link teacher training with university centers of knowledge. Thus the tendency to ignore the need for research, the massive denationalization of the teacher training institutes and their disorderly expansion, are some of the indicators whereby the purpose of ensuring ideological continuity has predominated instead of the intention of training people in how to develop the students' ability to think.

At the same time, renewal of the pedagogical systems was scant. The problem was to transform an elite education into an education for the masses. The number and social origin of the new students modified the program of a school culture adaptable or similar to the family culture, on the former was based. In the name of a supposed national integration, uniform syllabuses and programs were imposed for the whole country based on the most traditional pattern of elitist education.

Finally, research and experiments were so exiguous that a ritualization of education in fact took place.

In the past elitist education in Latin America did not give a dominant role to scientific, instrumental knowledge. What was important was to instill into the group a political capacity and a set of behaviors which would distinguish it as superior and would provide it with ways of thinking and acting which would be useful in the development of aptitudes required for ruling and decision-making. When the masses were incorporated into education, it was required for the sake of social mobility that their formation

should include effective knowledge, especially of a scientific and instrumental kind. In the last instance, of all the dimensions of power to be achieved, knowledge is the only one theoretically obtainable by individual effort. However, due to the dynamics of the quantitative expansion of enrolment, to the lack of consolidated academic structures and to the interest of the power groups in neutralizing the effects of educational democratization, the process was accompanied by a considerable reduction in the knowledge that was transmitted.

With the exception of those countries where a long cycle of educational development maintained an academic tradition, the new clientele in the others pressed for easy ways to obtain the certificates having face value in the employment market. And their educators accepted this, since it was compatible with their limited background.

It is interesting to point out that the coverage of the educational system exceeded the requirements of human resources posed by the economic system. As the majority of the educated persons could only be employed in the State apparatus or in educational extension services, knowledge was not a demand established on the basis of the production apparatus needs. Thus mass education took on the characteristics of a fulfilled prophecy. The top power groups never considered it advisable and it was only accepted as a way of controlling social tensions. The State did not engage, either, in policies designed in such a way that the educational system would provide a solid mass of knowledge. Finally, in the name of an alleged democratization and as a means of political mobilization, youthful groups pressed for the "simplification" of university studies (which in fact meant making them more superficial), emptying them of their educational content. This was a proposal which easily penetrated the student mass which, disoriented by an occupational and social structure that did not offer them employment opportunities, adopted skeptical attitudes about the usefulness of knowledge. Professional diplomas ceased to have universal validity and both business and the State began to qualify them in certain cases, according to university of demanding post-graduate degrees, which in general are considered as indicators of proficiency, or at least of interest in knowledge. In extreme cases, all national education was depreciated and degrees obtained abroad were demanded.

It is not necessary to insist that these mechanisms ensured a class-based, social selection, partially annulling the democratizing effect of educational expansion.

The central subject around which revolves the problem of the quality of knowledge in mass education in Latin America is, on the one hand, the low level of the production apparatus requirements and, on the other, its potential danger for the prevailing power system.¹⁹ Not only the non-elite part of the educational system seems to begin to be margined from production and power but also the price of this marginalization appears to be the draining away of academic content.

(7) *Pedagogical authoritarianism and political conformism* : The classic pedagogical relationship is, by definition, asymmetric : one of the actors transmits knowledge and the other learns it. The relationship takes on a singular shape when one realizes that to acquire knowledge implies -as Gramsci said- greater effort and discipline than apprenticeship in manual work. It also requires the dedication of the educator so that the pupil is led to make the effort when he lacks an internalized orientation towards learning. On the basis of this pedagogical relationship authoritarian elements have been added to and integrated with it. It is impossible to set out here the different sources of pedagogical authoritarianism. Let us recall some of them : the persistence of a pedagogical tradition which originated in authoritarian societies ; the social or intellectual weakness of the educator, who attempts to protect himself by means of authoritarian behavior ; the authoritarianism prevailing in the home and its projection into the classroom ; the pre-conditioning of the child and the adolescent for the passive, conformist attitude he must assume later as a worker in the industrial factory and, finally an aspect not to be overlooked : the teachers who, as a group, represent the moral authority of the *Society*.

A community, an organization of knowledge officiators, expresses itself through the educational process. Its action provokes a subtle blend of power, belief and solidarity which, while enjoying a tacit authority recognized by all, has no need to recur to authoritarian forms by it does so up to sadistic levels when the power of the officiators is questioned.²⁰ Moreover, the integrative tendencies implicit in education and the backing supplied by the positivist image of science, lead to a situation in which knowledge can be confused with belief and the transmitter with an officiator. But since this academic milieu is contradictory to the general conditions of urban life, to the lessening of authoritarianism in family life, its characteristics become exacerbated and accentuated by the poverty of content, highlighting the ritual authoritarian aspects corresponding to a dogmatically transmitted knowledge.

On that basis, ideological confrontation in Latin America led the elites in power to aim at achieving political conformism by means of educational socialization. For this purpose, contents related to the present situation were eliminated from the syllabuses, non-conforming professors were excluded and the mechanisms of active, participatory education were eliminated. In addition, an *absolute truth* was proclaimed, which had to be taught as a principle of education.

As the official word is more explicit than our comment, the text by a director of basic and secondary education in a Latin American country is quoted below :

"...the majority was imbued with the sap of materialist thinking which the 'Roussonian' (sic) philosophy of nineteenth century France spilled over the world and the outpouring of their voices...inebriated the country's cultural and political precincts with a frenzied liberalism that buried

the humanist ideas of the Hispanic inheritance. And its consequent disciples formed legions of citizens incredulous of the Natural Order of Christian thought, defenseless against the tides of Marxism which would reach our shores a few years later."

And he added :

"Those teachers were no more than the representatives of the liberal school in which they had been formed as university students and, as such, sincere defenders of a secularization which is aberrant because of its complicity with masonic-inspired atheism, and that turned them into the naive supporters of 'all ideas are respectable', a stupid motto which gave cover to the Marxist streams which by that time had already begun to penetrate."

(8) *The relative autonomy of the educational process* : The teaching nowadays provided is a typical sign of the quality of the services, since its expansion is carried out without any increase in productivity. The larger the number of students, the larger the number of teachers.

In Argentina in 1975 the teachers numbered 442,000 ; in 1970 in Brazil 1,200,000 ; in Venezuela in 1975 the figure was 146,000 and in a similar manner in the different countries. In the first-mentioned country, the teachers represented a volume equivalent to one-third of the active rural population and a quarter of the economically active population in industry.

It has proven to be very difficult to carry out a monolithic ideological control over this professional sector, even in those countries which designed the purging of the teaching ranks applying the most rational, sophisticated methodology.

The educational system, beyond the programs, service instructions and disciplinary controls, comprise innumerable *educative acts* which are produced individually and spontaneously in the classrooms and which result from the interaction between teachers and students in a process which is not predetermined and which brings as a consequence conformation of ideas and creative freedom. Thus the academic practices based on freedom to criticize tend to reappear after some time and the authoritarian project shows its weakness in two crucial aspects : first, because of its lack of an ideology able to give satisfactory replies to social and intellectual demands; secondly, because of the absence of an ample intellectual team which could be the bearer and transmitter of that ideology.

The teaching corps experiences more rigorously than other professional groups the drop in its income and the incongruence between the formation received and the status recognized. Furthermore, a sector of it is the daily witness of the conditions of the poorest social strata. One way of reacting is to become mentally identified with the power elite and the other, more generalized in countries where higher education levels have been massified, is to become a critic of a social system which, among other things, is not capable of using its own human resources.

At the same time, the massification of secondary and higher education provokes a growing crisis in the idea that society offers ways of social mobility through education. In general, its graduates are pushed towards forms of underemployment or towards a occupations where there is no opportunity of applying either personal talent or training.

The dissatisfaction of graduates lays the foundations for a growing intellectualization -understood as the opposite of professionalization, to use Joseph Schumpeter's words²¹ -encouraging criticism of society and especially of the cluster of factors which prevent the achievement of a substantial democracy. In these conditions, educational expansion --which in its growing phase is the source of integration and conformism --can turn out to be the basic condition from which to develop the rejection of the social structures corresponding to the present development model and the ideology of the power elite.

The foregoing does not imply regarding the process as one-directional. Manuel Antonio Garretón²² considers that the orientations towards universalism or towards particularism in the sense of being oriented either by a societal project or by a particularist, social class appropriation, constitute the 'drama' of student behavior. According to whichever prevails, the social change effect promoted by education in the democratic system will be very different.

What is evident is that the dynamics of education is very much greater than in the remaining social dimensions. This dynamics is creating an increasing imbalance between the opportunities for access to culture and those existing in relation to other social 'goods', as well as a similar discrepancy between training for political participation and the concrete opportunities for access to it. It would appear that the reproductive function of education in terms of ideology has a limited scope in view of the social contradictions in which the process of educational expansion takes place.

In spite of the limitations referred to above, it is evident that education achieves a certain diffusion of the scientific mentality which cannot be confined within the frame of conservative rationalism—"If the laws are the necessary relations derived from the nature of things" (as Bonald said) "these relations are necessarily established ; thus man, although free, cannot delay their development." The incongruence between democratic values and social reality is too intense in Latin America. Therefore, with contradictions and limitations, education is contributing more to a critical than to a technocratic rationality.

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Indian Education: The Anti-Cultural Involution*

DINESH MOHAN

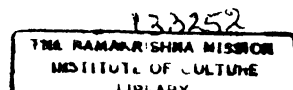
“Teaching the Unteachable”—“Education for Sale”—“New Bureaucracies Taking Birth”—“Delinking Education from Employment”: these are titles of articles recently written, grappling with the problems of higher education in India¹. Rarely does one see a spate of such articles on primary education or adult education. A curious phenomenon, considering that even official statistics do not put adult literacy rates above 36% and enrolment of students in middle schools over 37%.²

This is significant because functional literacy must then be well below 30% in India. Even among poor countries India ranks among the lowest in functional literacy and primary education, though there is no excuse for this. Our mental preoccupation remains with the problems of universities, and that of the government with “law and order” in these institutions. The problem of functional literacy is relegated to providing funds and “teachers”. However, the two issues cannot be separated, and what we do with higher education will have a direct bearing on primary and secondary education. It is my contention that the expansion of higher education (or even secondary education) without accompanying political changes can actually result in an anti-academic climate and a strengthening of reactionary forces. Here I will attempt to demonstrate that our preoccupation with higher education results from an unnatural expansion of higher education facilities far beyond what our polity can tolerate or accommodate and that most discussion remains at a superficial level.

The Problem

The articles mentioned above concentrate mainly on the lack of student motivation, the undue importance of examinations, the corruption of teachers

*Patriot-Link Anniversary Celebrations, National Seminar on India towards the 1990s (26-28 March, 1983), New Delhi.



and students, the existence of question banks, the low salaries of teachers, learning by rote, the bureaucratization of education, the linkage between jobs and degrees and the politicization of universities. In a recent lecture, Professor Rais Ahmed (currently Vice-Chairman of the UGC) even ventured to suggest that "instead of benefiting, universities seem to have become a victim of *democracy* and politics" (emphasis added).³

The present Chairman of the University Grants Commission, Madhuri Shah, lays a great deal of importance to the law and order problem in most of her speeches. There is an assumption in all this that the problem is not endemic but can be resolved by reforms. Preeti Mehra reports that "several academicians feel that reforms are not the crucial question. Streamlining the present system is⁴ V.V. John puts all the blame on the politicians and students: "there is a state of mind that is fostered by our political culture - a mind that is filled with positive hostility to learning."⁵ "But none of these analyses go far enough. *The fact is that we have effectively closed down many of our Universities though the doors are still open. That is why reforms are almost impossible.*

Our physical situation is not very different from that in China during their cultural revolution. Though the formal decision of the Central Committee of the CCP concerning the Great Proletarian Revolution was to end the "bourgeois domination over schools", in fact they seemed to have realized the irrelevance of their universities and of their existing structures. The period was used to change admission procedures, examination systems (open book exams given more importance), curricula and teaching materials (many courses were shortened and others terminated. Enrolment in universities in China was heavily curtailed in the late sixties and admissions were increased only in the middle seventies. This gave them a chance to make the necessary changes and follow up with the modification of more recent years.

Our ways seem to be more devious. Starting in the sixties we also stopped imparting university education in its old form, but we have neither instituted changes nor increased the quantum of students receiving any *education*. This we have achieved not by policy but by unilateral decisions taken by each individual involved in the education business. Since no reasonable academic exchange takes place in a large number of classrooms across the nation even when colleges are officially open, there would be little academic loss if the university was closed.

The students have realized that most of what they learn in college is not very useful and not really in demand. In addition they find their guide books and text books easier to follow than their teachers. The logical response to such a situation is to not attend classes, demand easier examinations or no examinations, and purchase examination papers. Since they really do not understand what they read, it is more efficient to learn it by rote. Since none of this really could excite a normal human being, boredom is at least alleviated by strikes, poster painting, gossiping, politicking and

evetceasing. All perfectly reasonable, and the only responses possible. Students' union have hardly ever demanded cheaper books, better libraries, longer library hours, easier access to self-instruction correspondence courses or night classes. Higher *learning* is obviously not perceived to be important or necessary.

The teachers on the other hand also realize the irrelevance of what they teach. Most of them do not even understand the material they are expected to teach. Since they cannot explain complex ideas it is natural for them to encourage rote learning. The uselessness of this knowledge is confirmed by their life experience: outside the classroom there is no demand for what they are supposed to be experts in: the community and society never asks them to give help in the areas of involving their expertise and knowledge. Therefore there is no need to keep up with the latest developments in their fields, or to take an interest in students, or to set imaginative examination questions, and there is certainly no need to improve standards. It is better to avoid classes and ask for higher salaries and continuous promotions. But the formalities of the job demand "academic" achievements though the situation does not permit most teachers any such luxury. The only way out is to produce pseudo-studies and mock theses. If that fails, the authorities have to be blackmailed to extort material needs.

Teachers' unions have rarely pressed for better classrooms, more teaching aids, journal allowances, more modern curricula, elimination of useless courses and higher standards, or academic freedom. All these are far from their concept of faculty benefits.

The public in general and the employers in particular have internalized the state of affairs and found their own piece-meal solutions. They do not try to improve the higher education set-up by influencing professional societies or investing in universities. Nor do they protest when universities are closed. Citizens forming a committee spontaneously to help solve university problems is rarity. Even elite institutions suffer benign neglect: no industrial house has donated a laboratory to any one of the Indian Institutes of Technology. If the employers really valued higher education they would take greater interest in these institutions and even protect them from deterioration. If the employers really needed graduates from universities, they would get very upset if universities did not function properly. No trade or manufacturers' organisations have protested when a university remains closed for most of the year.

The only people who get worried are the keepers of law and order, the bureaucrats and the parents. Not because education suffers, but because universities being closed formally is a greater law and order problem than universities being open. Mind-killing universities and colleges are a good place to keep the youth occupied. A good diversionary tactic. The young men and women can be kept busy worrying about irrelevant and incomprehensible material, notes, examinations and cheating. At worst they can deface walls, burn a few buses, and get teargassed. But they generally stay away from agitating about prices, police atrocities, terrible medical

care and civic amenities. By the time they cheat their way through examinations their minds are dulled and their parents ready to get them married. Once married they are safe. After going through a dishonest days work they have no inclination to worry about societal evils nor the energy to do anything about them. Our universities are actually a tremendous help in keeping the lid down. At least for the time being. The government probably recognises this role of "higher education" but is not about to acknowledge it.

In brief, a case is being made here that higher education has expanded far beyond what India needs and can absorb. This is probably one of the important reasons why standards cannot be raised, reforms not implemented and streamlining not possible. In addition, this results in a substantial lowering of standards, perpetuates inequality, promotes anti-intellectualism, and diverts attention from the more important tasks of learning and literacy. In affect we have closed down most of our institutions of higher learning. The rest of the article attempts to substantiate some of these assertions with a brief discussion on possible counter-measures.

Unreasonable Expansion

Among the nations classified as low-income and middle income by the World Bank, India leads in the number of graduates produced every year. We are also reputed to have the third largest stock of scientific and technical personnel in the world. Though almost everyone agrees that the average quality of this stock is dismal⁷ no one questions the validity of the above statement. According to a publication of the Department of Science and Technology of the Government of India, at least seven other countries, —Argentina, Italy, Japan, Poland, USA, USSR and Yugoslavia have more scientists, engineers and technicians than India⁸. I am personally not really concerned whether we are third or tenth, but more interested in what is the role of this manpower and what the trends indicate.

Figure 1 shows the phenomenal rise in higher education in India. In all probability, elementary education statistics are probably less reliable than the university enrolment statistics and therefore the disparities may be worse. Looking at the plan allocation figures it appears that higher education has been given a disproportionate amount of importance in India. It is only in the 6th plan that elementary education has been given a relatively higher allocation. But we must remember that basic education and higher education share a symbiotic relationship: if basic education is bad then students going into higher education would be of poor quality; if higher education is of poor quality, secondary school teachers would be of poor quality. In the extreme situation this would result in a downward spiral in both sectors. In higher education there are many other issues involved : are the finances adequate ? Is there a demand for the products of universities ? Is the education relevant ? Which section of the population

is being served ? Do universities impart needed skills, idealism and motivation ? All these are inter-related questions and none of them independent of the political and economic structure of the nation. I believe that it would be very difficult to resolve any other issue unless the need and demand for higher education is sorted out first. Solutions to other problems would be easier after that.

Figure 1 shows that as enrolment in higher education increased in India so did the number of Indian students in the USA. I do not think that this relationship is entirely fortuitous, though factors such as immigration laws in the USA do influence it. However it does indicate that highly trained persons in India may be in excess and they do not find adequate outlets in India.

Figure 2 shows that though expenditure on education as a percentage of GNP is low in India, enrolment at universities as a percentage of labour force in industrial and labour sectors is very high. Enrolment at the third level (beyond secondary school) as a percentage of population has not been used because I think it is mainly an index of poverty and lack of industrialisation. Since university or professional graduates seek jobs mainly in the industrial or service sector the ratio used in Figure 2(a) may give us a better indication of the relative demand for higher education. In the industrialised countries the expertise level required in the service sector and the skilled to unskilled ratio in the industrial sector is much higher than that in India. The data in Figure 2(a) indicates that third level enrolment may be far too high in India for current socio-economic conditions.

Industrial and service sector employment would have to increase many fold before university graduates in India could find meaningful employment. This is if we follow western models of development. Since we do not have capital and resources to waste, we may need much lower ratios than even the UK.

Another way to look at the same issues is to compare the number of scientific personnel as a ratio of the industrial product instead of the total population. The former ratio may give some idea of current need whereas the latter just indicates the level of poverty. Figure 3 shows these statistics of India, the USA and the UK India produces about ten times as many engineering graduates per billion dollars of manufacturing product as the UK does! Even if the price differentials are taken into account, it is clear that either India produces too many engineers, or that most of the engineers may not be of good quality, or that many of these graduates do not work as engineers. Or all of the above.

The disparities are not as large, but a similar situation seems to be true for the number of scientists and engineers involved in R & D (Figure 3). These statistics could indicate that the country is supporting far too many scientists for the level of manufacturing in the country, or that those listed as R & D personnel are really not involved in R & D.

Conversely, one could even say that since these ratios are so lopsided in India, it is not surprising that these scientists cannot be supported adequately.

What I have demonstrated above has been discussed qualitatively by many. The demand for delinking jobs from degrees actually is an assertion that there are not so many jobs as there are degree holders. But delinking is not the issue. It cannot be done as long as there are colleges which have openings for admission.

The employment exchange data give ample evidence of the overproduction demonstrated above. But no serious thought has been given to the magnitude of this problem, quantitatively or qualitatively. The indices I have used in Figures 2 and 3 clearly show that the higher education sector in India has expanded far too rapidly in relation to economic and industrial development. This expansion has had some very deleterious qualitative effects on the educational establishment as a whole. Some of these are discussed below.

Effects of Unreasonable Expansion of Higher Education

Sometime back I interviewed a first class graduate in electronics from G.B. Pant University. I quickly realized that asking him technical questions would not get me anywhere. So I asked him where his hometown got its power from. "The power house sir", he replied with complete confidence!

Such experiences are not uncommon whether the person being interviewed is seeking admission to a post-graduate programme, or a faculty position in a university, or a sales job in a company. They indicate the tremendous lowering of standards that has accompanied this expansion in higher education.

It is not necessary that lowering of standards will always accompany expansion. Not at all. Not if higher education expands in proportion to industrial and agricultural needs and not at the expense of basic education.

In India the expansion of higher education has been of a unilateral nature inspite of the 1964-66 Education Commission's observations in this connection : "There is a general feeling in India that the situation in higher education is unsatisfactory and even alarming in some ways, that the average standards have been falling and that rapid expansion have resulted in lowering quality" ? But the report itself did not deal with this problem of expansion which much seriousness. Actually the Commission envisaged expansion in university enrolments from 10 lakhs in 65-66 to 40 lakhs in 1985-86. And we have expanded almost as fast as the Kothari Commission suggested. It is important to note here that even when the problem of expansion was noticed no measures except streamlining and better facilities for students, faculty and staff were suggested.

The problem is that when there is no real demand for a large number of the university graduates, there is no external check on their quality by the users. This makes the students less discriminating and so there is no check

on the teacher. The teacher in any case is not of the highest standard any way and this lack of demand in turn makes him worse. Under such circumstances the university administrators in turn do not have to worry about quality. Then it really does not matter if faculty selections are not entirely fair. Quality is no longer the issue, personal gains are. One can't expect fair selections when there is no need to select the best.

Once bad faculty is selected then it is very difficult for good ones to get in. Only the good ones leave for the bad have nowhere to go. The good ones leave for another new institution or for greener pastures abroad. Since the average age of teachers in India is low, the universities are then doomed for decades.

In a large country there are bound to be large numbers of bright young people. If they are lucky enough to belong to the higher income groups they can gain entry to a few of the elite institutions and do well with the help of a few good teachers and good textbooks.

But there are very few openings where these excellent graduates can be used productively. Some, especially those in pursuing careers in science and technology chose to go abroad. The remaining are lucky if they don't end up doing work of a routine nature. Their potential is not challenged in areas they have been trained to think as their realm of expertise. This internal brain drain is far more harmful and a greater waste than the external brain drain we always focus on. When bright, trained and educated persons do not use their expertise the society gets an indirect message that specialization and intellectual activity may not be important or necessary. The importance of scholarship is thus devalued in general.

This effect is dramatically demonstrated by the fact that very few outstanding students opt for research careers. For example, hardly any of the Indian Institutes of Technology's own graduates return for post-graduate work. A Ministry of Education's Committee on higher technical education recently noted that "it has not been possible to attract sufficiently large number of bright young people for post-graduate education".¹⁰ But the authors of the report do not attack import of technology in strong enough terms nor do they discuss the rapid expansion of higher education as a possible cause of these problems. Figure 3 clearly indicates that we cannot use such large numbers of highly trained persons as long as we use models operating in the West. They seem to survive with relatively fewer experts for their level of development.

Another serious side effect of this rapid expansion, lowering of standards, and insufficient demand, is the widespread prevalence of fraud and Plagiarism in institutions of higher learning. Most heads of institutions do not even take reported cases seriously. Hardly any faculty members lose their jobs owing to academic dishonesty. Most retort that fraud is common even in America so who are we to get excited? But the proportions here seem to be frightening. In a private conversation a member of the Medical Council of India estimated that as much as 80% of the M.S. theses may be based on fraudulent data. In another such conversation an eminent scientist and

director of a national laboratory claimed that he does not accept examining Ph.D. theses because the results of 70% are not replicable. These are not matters to be brushed aside. They are devastating for a community and nation that desperately needs to be independent of foreign domination in knowledge and information.

One common argument in favour of rapid expansion of higher education is that this gives a better opportunity to the less affluent for upward mobility. Even this is being challenged. In the absence of accompanying political changes and improved basic education this may have the opposite effect. Richards and Leonor claim that "The promotion of education, which simply means its expansion, may equally well lead to the opposite of the effect intended, i.e. greater inequality in incomes and over all well being"¹¹. One of the reasons this can happen is because as the system expands unnaturally only a few institutions maintain standards. These institutions institute admission procedures and aptitude tests which generally favour those coming from better family backgrounds. In the other institutions, since the teachers and facilities are not good it is the students with deprived backgrounds who suffer more. In a very tight job market and over inflated supply situation, those with poor backgrounds end up where they started after having wasted time and effort in an endeavour that was supposed to help them in upward mobility. A sure recipe for cynicism and corruption.

There are many other effects of this lowering of standards, but I would like to discuss just one more. As the expansion of institutions has taken place the quality of academic work has reduced but the number of higher degrees has increased. As these Masters and Ph.D. Degree holders get jobs in research institutions and universities they all become equal. They forget that most of them did not do much to earn their advanced degrees. Living conditions being difficult all of them demand the same benefits that their best colleagues deserve. Initially some of them manage it by fixing selection committees, and then follow the demands of the unions. Eventually, those groups who have blackmailing power manage to get time-bound promotions and academic evaluation takes a back seat. In the above analysis I have tried to link many of the ills of our educational system to the rapid expansion it has undergone. I am not suggesting that this is the only reason, but only focussing on an aspect that has been neglected too long and little understood. It will not be easy to resolve either but some counter-measures have to be contemplated.

Remedial Measures

We must be clear that as far as national development and relevant research is concerned China and India seem to have fared equally well. At least in spheres we are particularly proud of, like space, nuclear research, agriculture, industrial infrastructure and defence¹². This is even true for others where we have not been so successful, like health, anthropology, archeology, etc. The West's (therefore India's) concern with the Chinese

cultural revolution's effect on research and development seems to be rather ill-informed. The past in China is regarded as a "mistake" because the present policies have changed. India's policies are supposed to be on the right track because there have been no major changes. This is hardly logical !

The fact is that though China closed down many of its universities in the 1960s and India increased its enrolment during the same period, the achievements in areas that matter to most of the people seem to be similar. The only conclusions I can draw from this is that university education in large numbers was not relevant to many development goals in China and that many universities have effectively remained "closed" for many years in India.

We must free at least half of the Universities by taking away their burden of having to behave like the old British Universities. They should be charged with responsibilities of teaching only and teachers should not be expected to earn Ph.Ds except out of pure personal interest. There should be many more short-term and evening courses and fewer degree courses. Half-hearted and ill-designed measures like UGC's Restructuring of Courses are doomed to failure since they just offer a sop. In this case, colleges were expected to offer "vocation related" courses, which are neither here nor there. It is significant that only 31 colleges and one university were implementing the scheme in 1981¹³.

We must try to move away from the populist concept of formal instruction for all to a concept of learning for all. If we accept the latter concept, then many fewer institutions would have to function in the form of the UGC's concept of a university and then institutions could provide central facilities like libraries, laboratories and computer centres to a larger community, along with short-term correspondence and evening classes.

None of these changes would be very beneficial unless they are accompanied by drastic cuts in English Honours courses, B.A. pass courses, the banning of English medium education, a reduction in the import of technology and other administrative measures constantly discussed.¹⁴

At best, all that English honours courses accomplish is to produce teachers for teaching more English honours students. At worst they are an absolute waste of time, energy and money. English medium instruction itself turns decent human beings into semi-literates in India. They end up knowing very little of the people and culture of their surroundings and imbibe a bowdlerized version of a culture alien to them. It gives the false notion of equating the English language with the quality of education. Learning and teaching in the English language further adds to an exacerbates the class divisions already prevalent and closes doors of opportunity for the less privileged.

I am under no illusion that these changes can be brought about just by a fiat from above. Or that such a policy can actually be formulated. By demonstrating the above relationships it is my intention to show that improvements in primary and secondary education cannot take place unilaterally. Neither can the problems of universities be dealt with unless the

issue of expansion is first understood in all its details. This is crucial matter and we cannot hide behind our pride in large numbers.

Conclusions

The present situation in Indian higher education is analogous to the cultural Revolution period in Chinese education, though only superficially so. The situation is more accurately described as an "anti-cultural-involution": a regression rather than a new start, and highly negative in its impact on self-worth. The majority of our universities are for all practical purposes closed, though their buildings usually remain open. 133252

China could re-open its institutions of higher learning and assign them new and more appropriate rules and duties. India will not be able to "reopen" its institutions for the better unless some of them are closed first. It is my contention that many of our problems in education stem from a rapid expansion of higher education. We have to dispense with the idea of formal instruction for all and invent systems which provide *learning* for all.

The alternative is to keep "closing" more institutions, as in the past, and replacing them with more new institutions. Can we afford this? No but this is what we are going to get. What are we going to do about it?

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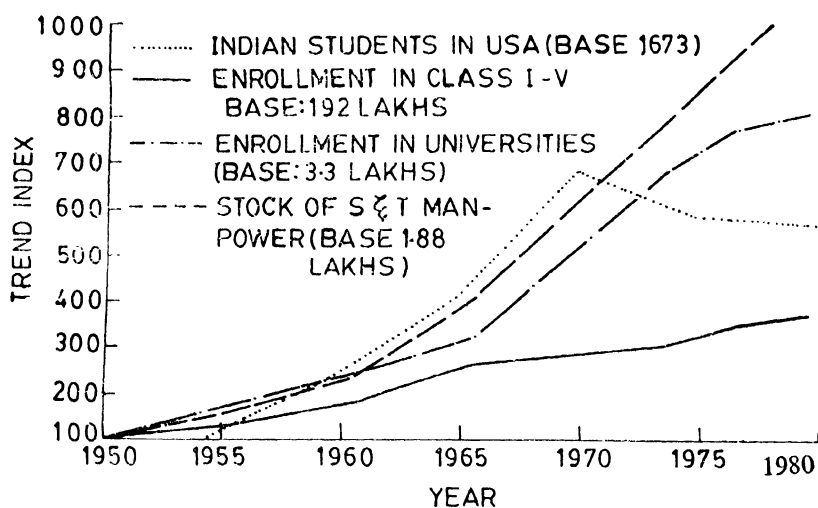
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EXPENDITURE ON EDUCATION IN CRORES

	4th PLAN	5th PLAN	6th PLAN
ELEMENTARY	240	410	905
UNIVERSITY	214	450	762

FIGURE 1 TRENDS IN EDUCATION IN INDIA

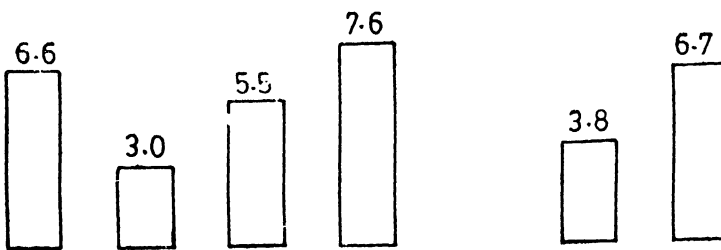
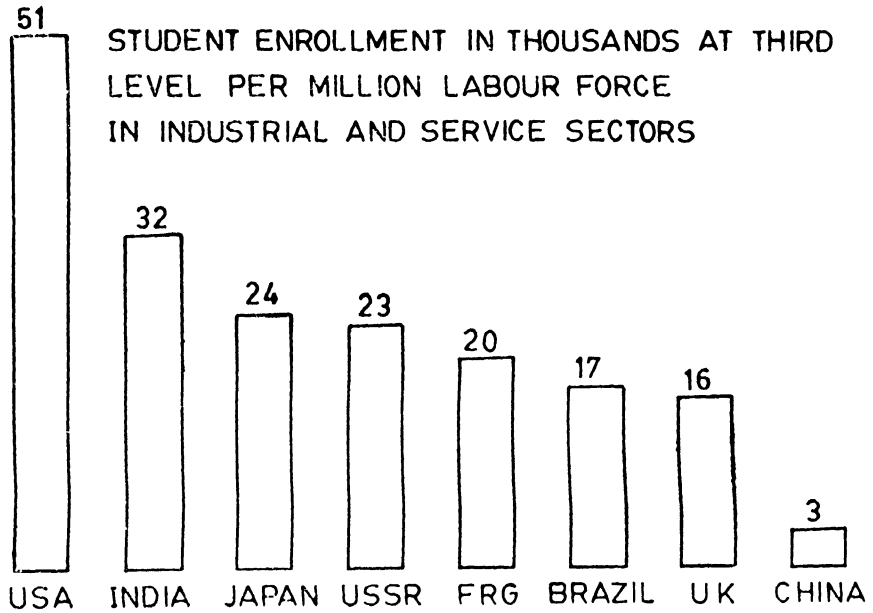


FIGURE 2

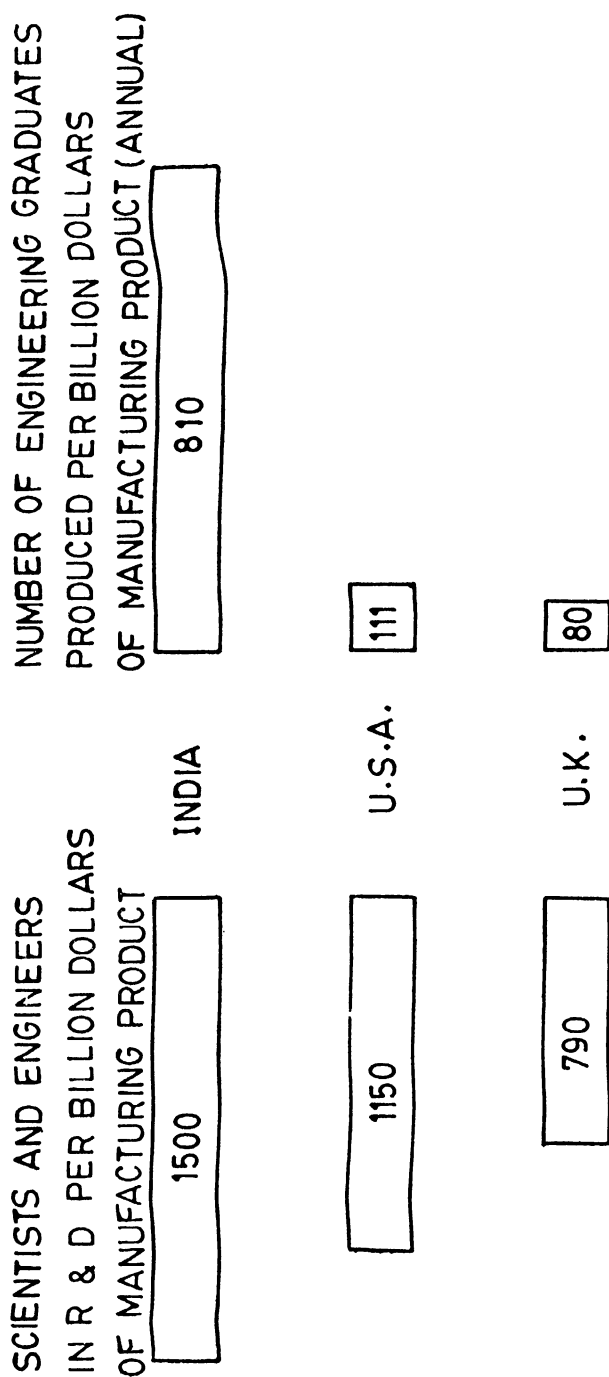


FIGURE 3 SCIENTISTS AND ENGINEERS IN INDIA, U.S.A. AND U.K.
AS A RATIO OF MANUFACTURING PRODUCT

Institutional Quality, Student Input and Output: Analysis of Six Indian Universities

M.A. KHADER AND SUSHILA SINGHAL

The socio-technological changes in post independent India warranted changes in occupational patterns. Simultaneously, the demand for education grew. The educational system in the country expanded at all levels and quite disproportionately at the college level (PsacharoPoulos and Hinchliffe, 1973; Naik, 1975b). Educational institutions multiplied, though established colleges continued to provide educational access to the privileged few and get relatively higher subsidy. This resulted in increased qualitative differentiation among colleges and universities. A linear expansion in educational institutions without adequate increase in inputs is known to result in differential quality (Seshadri, 1976).

One explanation of differentiation in the quality of colleges and universities can be offered in terms of the existing institutional environment, student characteristics and student output. In spite of the communality of goals and roles, colleges and universities differ from one another by their environment (Astin, 1962, 1968a; Carnegie Council, 1975). A college or university comprises of faculty, students, institutional size, finance, library facility, curricular activities, level of selectivity, financial assistance to students and similar elements. The combination of these elements in an institution creates a context which is unique. The manner of selection of students, for instance, to colleges or universities is not random. Often it is regulated by the level of selectivity and varies across the type of institutions (Astin, 1971; Astin and Lee, 1972; Solmon, 1975).

Despite the meritocratic nature of the selection process, socio-economic status differentials exist within the system of higher education. Where one goes to college is found related to one's position in social structure (Karabel and Astin, 1975; Olivas, 1979). The socio-economic background, if higher,

facilitates ones attending socially select secondary school and enhance the likelihood of attending a relatively selected college or university (Sewell and Shah, 1967; Karabel and Astin, 1975; Alexander and Eckland, 1977). Differences are visible on institutional environment (Astin, 1968; Astin and Lee, 1972), students characteristics (Feldman and Newcomb, 1969; Astin, 1977) and student achievement (Rock, Centra and Linn, 1969; Centra and Rock, 1971, Bowen, 1978).

An assumption underlying these researches is that there exists an environment within each college or university which attracts students within a range of background characteristics. The students' background characteristics and the college environment influence his integration into the institution's academic system besides influencing his academic performance. The individual's interaction with the institutional environment and his subsequent academic performance, then, creates a distinct context for that college or university.

In India relatively little research has been done to analyse these differentials and its consequent impact on student behavior. The present paper attempts to analyze variations in perceived environment, students' personal factor, parental socio-economic status, level of selectivity and college achievement by level of university, level of college and type of curriculum.

Method

Sample: Selection of sample is done at two levels, first at institutional level and then at the individual level. At the institutional level, universities are treated as universe of population and selection is made at two stages, macro level and micro level. At the macro level, though there are more than 100 universities at the time of collection of data (1976), University Grants Commission had records available only for 37 universities. Of this, data were available on 14 universities for 3 consecutive years (1972, 1973, 1974) on 17 universities for 2 years (1973, 1974) and on 6 universities only for 1 year (1974). The information is available on institutional characteristics, finance, library facility, size of faculty and their designation, rate of enrolment, number and amount of scholarships and freeships to students. Using these information per capita expenditure, staff-student ratio and percentage of students getting scholarships and freeships are calculated (Table 1).

The data reveals that the composition of universities differs and these can be stratified into three groups, high, medium and low on the basis of these characteristics.

High: These are universities with high per-capita expenditure, low faculty-student ratio and higher percentage of students getting scholarship or freeships.

Medium: These are universities with higher faculty-student ratio but low per-capita expenditure and percentage of students getting scholarships or freeships as compared to good universities.

Table 1

DISTRIBUTION OF 37 UNIVERSITIES INTO THREE GROUPS : HIGH, MEDIUM AND LOW LEVELS

Category	University	Per Capita Expenditure (By Rupees)	Staff Student Ratio	Percentage of students getting scholar-ships
H	Delhi*	3357.02	1 : 26	36.34
	Mysore	3120.15	1 : 28	32.02
I	Poona	3316.27	1 : 24	33.15
G	Punjab	3498.37	1 : 27	37.10
H	Nagpur	3275.64	1 : 23	32.98
	Andhra	3724.12	1 : 25	38.06
M	Madras*	3650.86	1 : 28	35.14
	Ravishankar	3328.73	1 : 29	34.34
	Osmania	3105.20	1 : 27	32.37
	Agra	2569.18	1 : 35	27.53
	Dibrugarh	1780.03	1 : 36	25.34
E	Gujarat	2760.64	1 : 30	29.82
	Marathwada	2815.25	1 : 34	30.34
D	SNIT Womens	1310.90	1 : 33	24.01
I	Karnataka	1429.53	1 : 34	26.22
	Kinrukshetra	1607.58	1 : 38	25.35
U	Meerut	1820.34	1 : 36	27.85
	Rajasthan*	1911.15	1 : 35	26.41
M	Berhampur	1536.24	1 : 38	24.86
	Kerala ²	2584.71	1 : 35	30.34
	Madurai Kamaraj	2480.01	1 : 34	31.06
	Udaipur	1350.18	1 : 37	33.61
L	Bihar	935.25	1 : 42	18.32
	Gauhati	1015.08	1 : 40	21.67
	Kashmir*	1214.13	1 : 40	22.03
O	Ranchi	1118.79	1 : 39	20.54
	Jabalpur	805.61	1 : 42	21.00
	Jadavpur	972.89	1 : 38	18.81
W	Kalyani	793.50	1 : 40	16.30
	Utkal*	984.50	1 : 44	17.05
	Sardar Patel	856.94	1 : 41	15.19
	Saugar	1052.25	1 : 45	19.43
	Vikram	972.89	1 : 39	18.36
	Bhopal	795.16	1 : 38	16.82
	Jammu*	689.55	1 : 42	16.58
	Shivaji	890.12	1 : 43	20.67
	South Gujrat	820.48	1 : 39	18.00

*denotes universities selected for macro level study.

Low: Universities have the lowest per-capita expenditure and the percentage of students getting scholarships or freeships but the highest faculty-student ratio as compared to good and average universities.

Out of the 37 universities representing 3 strata, high, medium and low, six universities are chosen for the micro level individual analysis (Table 1). Two universities are included in each category and within each university three colleges are identified using the above characteristics as representative of high, medium and low. Thus a total of 18 colleges are chosen at the micro level sample for individual analysis. The individual level data is obtained, using random sampling procedure on 1265 final year students studying in three-year graduate programmes in Science, Arts and Commerce from 18 colleges.

Variables: The variables consist of dimensions of institutional and individual variables. These are:

Personal Factor: This consists of achievement value and manifest interest. Achievement value refers to the strong desire of an individual to compete successfully with a standard of excellence or expressed interest in undertaking difficult and challenging tasks and a strong sense of optimism. Manifest interest refers to achievement in activities like creative work, art, literary work, debate, sports and games, music and science contests. The two scores are combined into a composite personal score by the method of averaging.

Parental Socio-Economic Status (PSES): It includes the level of education and occupation of father and mother, and the overall annual family income.

Perceived College Environment: refers to the environment perceived by students in terms of facilities, curricular activities, communication between student and teacher, and discipline.

Level of Selectivity: refers to the level of academic performance at school and graded as first, second and third divisions. Selection to B.A., B.Sc. and B.Com. courses in colleges and universities is based on the level of academic performance at school.

College Achievement: refers to the level of academic performance at college and graded as first, second and third divisions.

Tool: Data on personal factor, parental socio-economic status and perceived college environment are obtained using a questionnaire.

Characteristics Inventory: It consists of 18 items on achievement value, chosen from Mukherjee's Sentence Completion Test. It is a forced choice measure of verbalized need for achievement values. The part-total reliability is 0.73. 13 Interest items consist of 7 latent and 6 manifest interest items. 18 items focus on students' perception of college environment. A college with high score on items of college environment is interpreted as having good facilities for students, high teacher-student interaction, discipline etc. The test-retest reliability is 0.81. It also includes items on level of education and occupation of parents and overall annual family income.

Level of Selectivity: is determined by school marks of the sample population (N 1265). This information was obtained from the respective college records.

College Achievement: B.Sc., B.A. and B.Com. grades were obtained from the respective colleges during the later half of 1977.

Hypothesis: Perceived environment, personal factor, parental socio-economic status, level of selectivity and college achievement differ by level of university, level of college and type of curriculum.

Analysis and Results

Perceived Environment: Table 2 presents the results of analysis of variance using perceived environment as the criterion.

Table 2
ANALYSIS OF VARIANCE USING PERCEIVED ENVIRONMENT AS THE CRITERION

<i>Source of variance</i>	<i>D F</i>	<i>F Value</i>	<i>P</i>
L U	2,1262	35.30	.01
L C	2,1262	26.01	.01
T.C.	2,1262	2.44	NS
LU & LC	4,1260	7.11	.01
LU & TC	4,1260	1.75	NS
LC & TC	4,1260	4.74	.01
LU & LC & TC	8,1256	9.19	.01

L U - Level of University
L C - Level of College
TC - Type of Curriculum.

When the main effects are computed, the level of university and the level of college reveal significant differences ($p < .01$) but the differences are not significant among students of Science, Arts and Commerce curriculum. Though high level universities as well as colleges differ from medium and low level universities and colleges in providing institutional environment, within a university or college the departments of studies exist as comparable.

Interaction effects of level of university and level of college, of level of college and type of curriculum are found to be significant ($p < .01$). However, level of university and type of curriculum do not show significant interaction effect. The interaction effect of level of university, level of college and type of curriculum is significant ($p < .01$). It seems that type of curriculum is significant only in the context of level of university and level of college, and all the three variables can combine differently and produce differences in the institutional environment.

Personal Factor: Obtained results in table 3 show significant ($p < .01$) differences on personal factor across level of university and level of college.

The main effect of type of curriculum is significant. It means that though students of Science, Arts and Commerce streams selected for the present study, constitute comparable sample in terms of personal factor, the

Table 3

ANALYSIS OF VARIANCE USING PERSONAL FACTOR AS THE CRITERION

<i>Source of Variance</i>	<i>DF</i>	<i>F Value</i>	<i>P.</i>
I.U.	2,1262	14.54	.01
LC	2,1262	5.26	.01
TC	2,1262	1.19	NS
I.U. LC	4,1260	4.00	.01
I.U. TC	4,1260	2.50	.05
LC TC	4,1260	3.10	.05
I.U. LC TC	8,1256	3.52	.01

I.U. Level of University

LC Level of College

TC Type of Curriculum

differences on personal factor can be seen across level of university and level of college.

The interaction effect between level of university and level of college is significant ($p < .01$). Interactions are also significant between level of university and type of curriculum as well as level of college and type of curriculum ($p < .05$). Significant ($p < .01$) interaction effect among level of university, level of college and type of curriculum is visible. This is likely to be a consequence of selection procedure adopted by universities and colleges at the time of admission to Science, Arts and Commerce courses. High level universities and colleges attract students with high scores on personal factor than the medium and low level universities and colleges.

Parental Socio-Economic Status: Results in Table 4 show significant ($p < .01$) variation in parental socio-economic status across level of universities and level of colleges.

Table 4

ANALYSIS OF VARIANCE USING PARENTAL SOCIO-ECONOMIC STATUS AS THE CRITERION

<i>Source of Variance</i>	<i>DF</i>	<i>F Value</i>	<i>P</i>
I.U.	2,1262	41.47	.01
LC	2,1262	30.83	.01
TC	2,1262	1.24	NS
I.U. LC	4,1260	3.99	.01
I.U. TC	4,1260	3.48	.01
LC TC	4,1260	3.85	.01
I.U. LC TC	8,1256	3.60	.01

I.U. Level of University

LC Level of College

TC Type of Curriculum

No significant difference is found by the type of curriculum. The interaction effects of level of university and level of college, level of university and type of curriculum are significant ($p < .01$). This indicates that students who are in high level universities and colleges come from better parental social status as compared to those who are in medium and low level universities and colleges. The type of curriculum seems to matter only within the institutional framework.

Level of Selectivity: Table 5 reveals significant ($p < .01$) variation by the level of selectivity by the levels of university and the college.

Table 5

ANALYSIS OF VARIANCE USING LEVEL OF SELECTIVITY AS THE CRITERION

<i>Source of Variance</i>	<i>DF</i>	<i>F Value</i>	<i>P</i>
LU	2,1262	50.01	.01
LC	2,1262	56.26	.01
TC	2,1262	1.60	NS
LU * LC	4,1260	8.28	.01
LU * TC	4,1260	21.78	.01
LC * TC	4,1260	3.12	.05
LU * LC * TC	8,1256	21.57	.01

LU = Level of University
LC = Level of College
TC = Type of Curriculum

Evidently the admission policies of high level universities and colleges are based on higher level of performance at school than the medium and low level universities and colleges. Insignificant difference by the type of curriculum indicates that students with similar level of performance at school may opt for Science, Arts and Commerce curricula within the institutions of their choice. Interaction effects of level of university and level of college, level of university and type of curriculum, level of college and type of curriculum as well as level of university level of college and type of curriculum are significant above 5 per cent level. Apparently the type of curriculum matters significantly in relation to level of university and level of college.

College Achievements: Significant ($p < .01$) differences are observed on college achievement by level of university, level of college and type of curriculum (Table 6).

It means that student's academic performance in their curricular programmes in three levels of universities and colleges are at different levels. Interaction effects of level of university and level of college, level of university and type of curriculum, level of college and type of curriculum as well as level of

Table 6

ANALYSIS OF VARIANCE USING COLLEGE ACHIEVEMENT AS THE CRITERION

<i>Source of Variance</i>	<i>DF</i>	<i>F Value</i>	<i>P</i>
LU	2,1262	8.87	.01
LC	2,1262	25.87	.01
TC	2,1262	10.65	.01
LU · LC	4,1260	5.30	.01
LU · TC	4,1260	21.42	.01
LC · TC	4,1260	4.72	.01
LU · LC · TC	8,1256	16.87	.01

LU = Level of University
LC = Level of College
TC = Type of Curriculum

university, level of college and type of curriculum are significant ($p < .01$). This reflects that students' academic achievement in Science or Arts or Commerce stream differs with respect to the level of university or college he or she attends.

Discussion

The analysis support the contention that perceived college environment, personal factor, parental socio-economic status, level of selectivity and college achievement vary by the levels of universities and colleges. However, the type of curriculum matters only in relation to the level of university or level of college.

Observed differences in the levels of universities and colleges are related to the variations in the institutional attributes like policies and practices, faculty, curricular activities, enrolment rate, teacher-student relationship, peer-group association, library facilities and finance. Qualitative differences in institutional attributes affect the quality of environment and reflect variations among institutions (Astin and Lee, 1972; Alwin, 1974). Not all variations on these attributes can be controlled. It may be important to identify those which can be controlled or manipulated through reallocation of resources, especially finance which is crucial in creating institutional environment. It is important to know where the expenditure are made, what are the rationale for allocation, whether one should look for the proper attributes of faculty or some other productive aspects of academic environment.

Invariably, an elite college is inhabited by students with chosen personal attributes like high achievement value and talent. It means that elite institutions enrol students with a strong desire to compete successfully with a

standard of excellence or interest in undertaking challenging and difficult tasks than average or low level institutions. It is more likely that such students have relatively more talents in creative work in art and writing, athletics and science contests than those in average and low level institutions. Obviously, differences among institutions arise mainly due to the fact that they pursue different admission criteria. Elite colleges and universities attract a disproportionate share of the most able students (Spies, 1978) suggesting that the differences among colleges and universities can be accounted by the characteristics of the students they attract and recruit (Astin, 1973).

Students' entrance to college or university is not a random phenomenon. The system of higher education which is hierarchically differentiated is also a system in which the elite institutions are markedly selective. Evidences suggest that elite universities and colleges are selective using high school marks or ranks as criterion of admission to graduate programmes in Science, Arts and Commerce. More students being keen in joining elite institutions than the number of seats available to them, the level of selectivity becomes highest for the most sought after institutions. Though this explains the substantial relationship between the level of selectivity and the institutional quality (Astin, 1971; Solmon, 1975), it reflects the meritocratic nature of the admission process. Nevertheless, it is possible that elite institutions are fearful that the influx of students would lead to mediocrity, and seek to prevent the demise of academic standards (Schudson, 1972). Academic's unwillingness to share the responsibilities in improving the performance of average students is also equally an important aspect for the concentration of academically talented students in a few elite institutions.

It appears that needs of the colleges as well as universities and the social system coalesce on the question of selectivity. Children from affluent families enrol themselves in elite institutions with high quality instruction and better facilities. The more well rated the institution, the more likely it is to attract students from higher family status. It means college quality is significantly related to social class origin (Harris, 1972; Karabel, 1972). Access to good universities and colleges, thus becomes limited to the privileged few. This indicates the possibility that children of low social origin have little chance of attending quality college. Apparently, social origin has great deal to do with who goes to which institution (Alwin, 1976b; Alexander and Eckland, 1977; Olivas, 1979). Students are differentially selected by different levels of colleges and universities depending on the important achievement related variables like level of selectivity, parental socio-economic status, talent and motivational factors. It is apparent that a student scoring high on personal factor, having origin in an affluent family and having higher grades at school is more likely to attend a high level university or college for graduate programme in B.Sc., or B.A. or B. Com.

Significant differences in academic achievement across levels of university and college explain that level of institution matters in academic achievement. In fact, elite institutions with their relatively better academic

environment seem to attract students from higher social origin. In such a context students, who have a strong desire to achieve and are talented, may markedly differ in their academic performance from those in average or low level colleges or universities. This explains the existing differences in academic achievement across institutions. The fact that institutions differ implies that some do better in academic achievement. Though difference in academic achievement in graduate programme is visible across institutions, further investigations are essential to establish casual connections among institutional quality, student characteristics and academic achievement.

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The Higher Education Scene in Britain Today*

ASA BRIGGS

Education is a subject of international concern. There are different educational systems in different parts of the world but we do have shared interests in the whole enterprise. My subject is *The Higher Education Scene in Britain Today*—but it will, I hope, be directly related to the kind of questions which concern us at the present time in the field of education, in whatever part of the world we happen to be.

The first point that I want to make by way of introduction is : how we view the scene in Britain depends, I think, on the vantage-point from which we view it. Places *do* look different, scenes *do* look different according to the angle from which one views them. Viewing the English educational scene from Delhi is a rather different experience from viewing the English educational scene from London—or, for that matter, from Oxford or Milton Keynes or Brighton.

If one is viewing a scene from *outside* the society, one inevitably tries to pick out what seem to be the essential elements in the picture, when viewed comparatively and at a distance. The points that still stand out in relation to the higher education scene in Britain when it is viewed from a distance, seem to me to be very basic and simple ones.

First of all, the system of higher education is a very varied system. It has a great deal of variety in it. It does not consist of standardised institutions which are all of the same type. The more you actually get closer to the detail, the more the variety begins to be apparent.

*In fulfilment of a longstanding commitment to write for JHE, Lord Briggs graciously agreed to the publication of his talk at New Delhi last winter. We acknowledge with thanks the courtesy of India International Center in handling tapes and efforts of Mrs. Shanti Varma in transcribing the text, Editor.

Secondly, it is a system which to some extent is stratified or sectorised in a uniquely British way (not necessarily for the good). For example, there is a distinction within higher education between what is done in the Universities, on the one hand, and the Polytechnics, on the other. We talk of a binary system : two separate sets of institutions, financed in a different way--and that division remains as real as it was in periods in the past.

Thirdly, there is still selective entry to the universities. That selective entry distinguishes the British system from a number of other systems. It is much more tightly selective than in most other countries : particularly so, if compared with the American system. Moreover, at the moment, if anything, in the course of the last two or three years, the opportunities for a member of the age-group going to university have diminished rather than increased.

Fourthly, although there is a selective higher educational system, the school system is becoming increasingly comprehensive at the base. The entry points into the university lead not as they did earlier through grammar schools which were concerned specially with children a higher proportion of whom were thought of as being potential members of a university, but through schools where the majority of children do not have university in view. And we live in a society where a very large number of people do *not* have university in view. Of course, within the school educational system there is still a division between what, in England, are called "public schools", which are, of course, private schools, on the one hand, and the schools which are provided by the local authorities, on the other.

Finally, there is the fact that there has always been a willingness within that rather complex structure of the English system, to innovate. Indeed, I would say that the most important characteristic of the system viewed from outside is that it is a system which to some extent is seeking all the time to balance tradition and innovation. Sometimes the traditional elements seem very strong; sometimes the innovatory elements have been extremely powerful. The balance is never quite the same between tradition and innovation, but there *is* always some kind of balance there.

Looking at the British system from a distance, then, all those points would, I think, have to be made about it.

Three Vantage Points

However, if we think of the vantage-point from which we view, we do need more intimate vantage-points from which to look at the scene. Instead of dwelling merely on generalisations, I would like to take vantage-points which are derived essentially from my own experience. I propose to try to take three vantage-points which, I think, would be helpful in providing a rather closer look at what is happening. They are really very different from each other, and have contributed to the way in which I myself look at questions of higher education. I believe that nearly all the most interesting

things that can be said about education are, in the last resort, autobiographical. (I went to Geneva to take part in an International Conference a few months ago and I did expect that statement to be made in Geneva, the place where Rousseau lived ; and I did expect that Rousseau's name would be mentioned. But I was a little surprised to hear it mentioned ten times in the course of the first five minutes). The autobiographical element in education does enable one to evaluate. And if you can relate autobiography to perspective, then it is possible, I believe, to get some greater sense of the vantage-points about which I am going to talk.

Let me draw a very sharp contrast between the first two of the vantage-points in my own experience : Worcester College, Oxford, and the Open University.

In Worcester College, Oxford, I am head of a smallish college, with 300-plus under-graduates, and 100 post-graduates. It has many of the characteristics of a closed society. This year, we are going to celebrate the 700th anniversary of the founding of the first Benedictine monastery which was there and from which the educational enterprise originally began. So there are 700 years of unbroken history behind it. It is a small institution where everybody knows each other by name and by face. There is a very strong sense of *place* in it, of the identity of a particular place. (I was out of it for 21 years ; I went back to it—and there are moments when I feel, on a bright, moonlit night, that I have never been out of it at all. It has an extremely powerful sense of place.) It is one piece, of course, of a much bigger pattern. It is one college in a complex of colleges, and every college in Oxford does, to some extent, have its own very distinctive identity. The University, in Oxford, is a much more shadowy institution than the colleges which make up the University.

The undergraduates who come to the university are almost all, in the case of my own college, of the age-group between 17 and 21. One or two of them are a little bit older. They are all used to working in academic work. They have all got a sense that the university course is something which they can understand before they come: they have got to learn how to tackle it, how to be independent learners, but they do not move into an unknown world when they come up to Oxford.

I bear all those points in the back of my mind when I think about the question of the vantage-point of Worcester College, Oxford.

Let me now take the Open University. It provides almost a complete contrast. My position in the Open University is that of Chancellor of the University. I am not an executive officer of the University. The Vice-Chancellor of the Open University, like the Vice-Chancellor of all our universities, is the person who is really in charge of it. But the Chancellor keeps a watchful eye on it, is there in certain circumstances to try to help it in its outside relationships. I see as many of the students as I can, and I do formally hand over to them, at a number of degree days, their degrees. I go out at the degree ceremonies which are held in places in England which never have had universities in their history, like Tunbridge Wells, or Derby,

or Preston, and I hand out degrees where, after the degree ceremony, I can walk outside the hall and I will find children taking photographs of their parents who have just got their degrees, rather than the other way around.

It is very large. It has an intake of 30,000 students a year. They come from all over the country. They are doing all kinds of subjects. They have all kinds of backgrounds. It is a new institution. It took its first students only in 1971. It is 12 years old—and that is a very short span in the history of an institution.

It has no particular place with which it is exclusively identified, although its headquarters are in Milton Keynes, which is named after two of the most famous names in English writing : Milton and Keynes. And in that particular place you have a headquarters which is related to a regional network : scattered around about the country there are regional Centres and it is those regional centres that provide the immediate framework within which the student of the Open University operates. In Oxford, the college in which I am is part of a bigger pattern. In the Open University, the central organisation of the Open University actually itself creates a much bigger pattern, so that there is a very different relationship between the part and the whole.

Most of the students in the Open University, though not all of them, are new students. Many of them have no idea of what it is to do academic work. Many of them are uncertain about the nature of the enterprise upon which they are embarking. Moreover, the courses are organised so that they can spend as much time as they want or need in order to complete them—or, indeed, *not* to complete them, because the whole way of organising the Open University is really to *not* say that there is a particular period of time, say three years or four years, which is the appropriate time to finish a degree, but to let the student do the degree in whatever period of time *he* finds it necessary in order to complete it. In point of fact, by a very curious kind of system, most of them do complete it within three or four years ; the numbers who take long tail away and fade away, although last year there were still some people taking their final degree who had enrolled in the first intake of 1971.

Now those are the two contrasting vantage-points from which to view the scene. You can see that when you take those vantage-points, you are drawn a great deal more, in an intimate sense, into what is going on in the scene than if you deal with generalisations at a distance—or, for that matter, if you treat education in purely statistical terms, which, of course, is one very common way of doing it these days.

I would like now to draw in the third vantage-point : the University of Sussex. I have been very strongly influenced in my own educational experience by being at Sussex, therefore I do tend to view things still from the vantage-point of one of the people who had the enormous privilege of creating a new university. To me, that unique experience has influenced the way in which I look at the Educational scene today. (Incidentally, I was the very first academic to be appointed to the staff).

We started the University of Sussex about ten years before the Open University started. For the first two years, there were more cows browsing about in the fields of the University than there were students in the classrooms ! We had to create every building on the campus afresh and we had the task of trying to translate a number of dreams, if you like, into realities -- in circumstances which were exciting but not entirely easy. The 1960s is probably the most interesting decade of this century as far as education is concerned, at least in Europe, because it did lead to a great expansion of development of education in all places and to the creation of new institutions. A tremendous *elan* was pushing through the '60s. But it was a disturbed and far from easy decade, and one which historians will have a great deal of fun writing about, later on. Producing a new institution during a decade when all old institutions were being questioned, in Europe, was certainly a greatly exciting venture.

We were only able to produce the University of Sussex as we did because we had a small and a dedicated planning team which looked at the logistics of growth in terms of the academic opportunities of the university. Having been involved with the same kind of group of people in that particular kind of planning, which involved resources, and ideas about curriculum, almost everything else which I have seen and heard about educational planning since has seemed to be inadequate in various respects or incomplete.

We were able to build an institution which did itself carry out a considerable amount of change through a period of very rapid growth. When I left the University of Sussex in 1976, there were 4000 students : we had started with 51 in the first year--37 women and 14 men (what was described as being a very interesting sex ratio!) : we ended up with a University which was more equally divided between men and women than any other university in the country. (As a result, I was ready, when I got to Oxford, for what seemed to be the very daring experiment of a small college becoming co-educational --for the first time in the history of Oxford--and it seemed to me that this was a perfectly natural development, nothing one should regard as being totally out of the ordinary--whereas to some of my colleagues in Oxford it represented the imminent approach of Revolution !).

Three Features

In relation to those three vantage-points, let me now pick out three features of the Higher Education scene in Britain which emerge out of each of those three kinds of institutional complexes, three features which I consider particularly noteworthy.

To my mind, the most important feature of the Oxford system (and, for that matter, of the Cambridge system, although perhaps a little less so) is not the college but the individual student's *tutorial*. The thing that struck me after I got back to Oxford after an absence of 21 years, was that the tutorial system was stronger rather than weaker, I think, than it had been when I left. I think it would be very difficult now in Oxford or Cambridge,

to break that tradition. It is still the case in Oxford that each week, individual students, pairs of students or sometimes very small groups of students go to an individual tutor and write an essay or produce a piece of work. Even if they are science students, or mathematics students, or engineers, they will be forced to produce regular pieces of work of their own which are handed to a tutor or read in the presence of a tutor, on which he provides his own individual comments. There is, therefore, a *personal* element in education which I regard as being of the utmost importance, educationally.

It is possible within the framework of the tutorial system to allow for changes in the pace and character of learning, where the length of the courses vary, so as to take account of the student's own pace. (This aspect is similar to that of the Open University).

The tutorial system is a very flexible system. It is a very expensive system to operate. But it is one which I think is extremely important, and it is one which has had a big influence on the whole of the higher educational scene in England. On the whole now in most Universities there is a far greater emphasis on small group teaching, even despite the budgetary cuts, than there was a quarter of a century ago, when the main form of teaching in most universities was through the large lecture. Undoubtedly, the change has really been influenced in large measure by a sense that in some universities it was possible to have a tutorial system. In Sussex, for example, we took over a tutorial system from Oxford and Cambridge: it did not really work quite in the same way: it was not so much an accepted part of the tradition.

That idea was taken over into the Open University also. It would be a complete mistake to believe that the Open University is merely using modern 20th century technology. It *is* using that technology - but it is using it also along with other elements in the traditions of English education which really go back to the tutorial. Let me expand on this. You enrol as an Open University student. You have the opportunity, when you enrol, of being given a bundle of materials of very high quality for every course that you study. These materials are also obtainable in shops, so that if you are not a student you could actually buy the published material. Most of this material is, I think, very well done on the whole. You then have the opportunity of not only looking at the material but you also have the opportunity of looking at television programmes and listening to the radio. Many people look at the material, many people watch the programmes, many people listen to the radio who never enrol as students. What *is* it that makes a student? It is not just looking at the programmes or listening to the radio or even looking at the published materials or the books. It is following the Course with a *Tutor*, to whom you do send in work and from whom you get individual comments back on the quality of your work. There is a battery of ways of learning and the object of the exercise, as in the case of the Oxford and Cambridge system at its best, is to encourage the student to become an independent learner and not just somebody who expects to be taught. I do

attach an enormous amount of importance to the idea of the individual becoming an autonomous *learner*, as independent as possible—and I regard everything that contributes to that process as being a means to an end.

I think, therefore, that when I look at the higher education scene from the vantage-point of Oxford to begin with, I am forced into thinking along those lines about the nature of the tutorial and its influence on the way in which the Educational system has developed.

If I take the Open University, what has been the most outstanding feature of the Open University so far which, I think, contributes to our educational understanding?

To my mind, the most important feature has been the development of the idea of a course team. This is something totally different from the idea of a tutor, and I would like to develop this a little. To my mind, the idea of the Course Team is more important than the idea of distance learning, in relation to the Open University. Distance learning is a very important way of looking at learning. It rests on the idea that somebody working at home, in his room, can be taught at a distance in various ways, can learn at a distance with the help of modern technology and tutoring system. But the course unit is something which is indispensable, I think, to the success of the way in which things are learnt. In the Open University there are about two hundred Courses and each of these Courses has been prepared by a team of people which include academics from the university, on the one hand, and people who are concerned with publishing and with broadcasting, on the other hand, working together as partners in a team. If you look at an Open University syllabus, you will see that through the way it organises its Courses it does something that most other universities do not do. At the beginning of every course, it lays down quite clearly what the objectives of the Course are: one, two, three. Then it will describe how the course is really going to be developed, given those objectives: it will be developed through the use of the new technology, through good publishing, through the influence of the private tutor, and also through summer schools, where the students will be able to get together to work in summer.

Now it has been an extraordinarily exciting educational venture to bring together people who are primarily concerned with sound radio and television and people who are concerned with Education, in the same team. Last year, for the first time in the history of the Open University, the new BBC studio complex was opened at Milton Keynes, where people do actually prepare the programmes. But they will prepare them only after there has been a very full and elaborate discussion through the course team, and only after the material which is produced by the course team has been sent to outside assessors who give their own opinions of whether the mix is right and whether the mode of treatment is right. So there is a great deal of self-evaluation at every point in the course team process.

I do believe that it is most important, given the tremendous possible power of television in our society, that we should learn how to use it intelligently for educational purposes as well as for other purposes. If we fail to

do that, we are failing to make use of television. But it is an expensive medium in education and therefore you have got to decide where you can use it most effectively. There are some courses, of course, where the television element is much more suitable than it is in others: where, in fact, you have got to put more money into television. Now it can be used marvellously in relation to the teaching of mathematics, in certain respects. It can be used in relation to the teaching of physics. It is indispensable in relation to the teaching of certain technology subjects. It is obviously of tremendous importance in relation to the visual arts. But it is less important, I think, in relation to some of the other subjects like English literature, which is of tremendous interest to people in the country. Therefore the television element has got to be worked out by the course team in relation to other elements which form part of the mix. Through the development of the course team, moreover, there is a more intelligent assessment, I think, of the instruments of Education, as well as the objects of particular courses.

Now let me go to Sussex and ask what it is about Sussex that would stand out in my mind most? It is the importance of inter-disciplinarity in modern education. When I had the privilege of going to Sussex I came to the conclusion that it would be totally wrong to create a new University where everybody went out of that University doing what most people were doing in other universities in England at that time: single subject Honours degrees. It is true that in Scotland there was an older tradition of mixed degrees of various kinds and there were some combined degrees in other British universities. There are far more of them now than there were when Sussex was founded. But my main objection to the combined subject degree of the kind that I have seen in so many universities in England is that you do not know who you are really working with: you do three-quarters of your time with one man and a quarter with another, or a half with one and a half with another—and no effort is made to see how they interlock, except in your own mind. I think inter-locking is a very difficult activity: it needs to be constantly monitored and it can never be taken for granted.

Further, as far as specialisation goes I wanted to get away from the idea that we could make real advantages in knowledge in the 20th century through increasing specialisation. I was fascinated by the fact that in Biological Sciences, where so many new developments are taking place, like, for example, the discovery of DNA round about that time, one had to have a team of people of different backgrounds and different disciplines in order really to make advances. I felt the same thing was completely true about most of the problems which previously had been dealt with mostly by economists working on their own, because in relation to Economic growth and in relation, more recently, to economic breakdown, it is impossible, I think, to look at the issues which arise in the real world without being able to relate economics to politics, economics to the pattern of resources in geography, economics to psychology, and economics to sociology. In other words I believed, and still most emphatically believe that a university education should enable one to see *inter-connections*, and not just to master particular Disciplines.

I am often questioned whether the quality of teaching suffers, in inter-disciplinarity. One has *always* got to watch out for quality—but, of course, one has also got to watch out for quality in disciplinary courses, which very frequently can become derivative in quality, with the text book there. The most exciting thing about the inter-disciplinary courses is that you have got to do them without text-books. Therefore the quality of inter-disciplinary teaching does depend on two things: first of all, the disciplinary quality of the people who are involved in the dialogue and the development, and secondly, on their own capacity as it were to work together in a group, to *think things out* rather than just to put a little bit of this in with a little bit of that. I would not, for instance, regard adding a little bit of sociology to politics, say, or to economics, as being in any way inter-disciplinary. I would regard that as just adding one bit of a discipline to something else. Call it *multi-disciplinary*, if you want it to be complementary, but it would not be *inter-disciplinary*. Inter-disciplinary work rests on a group of people coming together and trying to decide on what topics they can deal with in an inter-disciplinary fashion, and in what order, and I think it still requires a drawing on disciplines in order to make the work really effective.

Let me cite an example in my own experience. It was possible to develop inter-disciplinary science courses on properties of Matter by bringing together scientists who previously would not necessarily have given a common course. They spent a lot of time however, in discussing what they would and would not include: ultimately, we found it impossible to relate biological sciences to physical sciences in the way we wished. Therefore we had to have two separate approaches, if you like, to the subject.

On the other hand, we were able to develop a number of courses which had inter-disciplinary insights in them: for example we had one which we called The Modern European Mind, where really, quite genuinely, there was infecding into that from various disciplines, and something came out of it which was quite different from what it would have been if that subject had been taught just by historians, or just by psychologists, or just by sociologists, or just by politicians, and so on.

The device at Sussex which still stands and which, I think, will stand whatever difficulties of an economic kind may arise, is the device of organising subjects not into departments, which was the pattern in 1960, but into Schools of Study where different subjects are studied within that School in relation to each other and where everybody who is working in that School, whatever the particular discipline with which he is primarily concerned, will share a good deal of the work with other people who are concerned with other disciplines—so that when they do their common work together the insights and knowledge of one group will be brought to bear upon the insights and knowledge of another group. The fact that the term “School” is now used much more widely (sometimes I think very inadequately and unsatisfactorily), is, I think, a sign that that “School” concept, rather than the “Departmental” concept did have some value in the field of higher education.

When I go back to those autobiographical elements of my own experience, those, then are the three aspects that I consider the most notable, most worth emphasising, most worth considering; from Oxford, the Tutorial system; from the Open University, the Course Team, from Sussex, Inter-disciplinarity.

Six Contemporary Features

What about the higher education scene now?

I would like to pick out six very main points which seem to me to be of crucial importance in the British system. I am now broadening it out from the three places which I have been talking about.

First: in the light of the changes that have taken place, there is a continuing need for all people concerned with higher education to try to relate the traditions which they inherit in relation to higher education, to the capacity and the will, equally important, to *innovate*. Innovation, in higher education, can never be taken for granted. Some innovations are bound to be less successful than others. I would now be in a position, if I were to take the University of Sussex as an example, to point to one or two of the things which we tried to do at Sussex, which were much less successful than some of the things that we thought had an even less chance of succeeding.

Now where does innovation spring from? I think it must spring essentially from *inside* the academic community. But in order for the innovation to be effective, it will need effective modes of implementation. And the effective modes of implementation seem, to me, to require in each particular case a combination of team effort and a very intelligent assessment of resources.

Within the educational scene in England, there is still a good deal of innovation going on rather quietly, scattered about the place, bringing in sometimes new complexes of subjects—some of it now in the technological subjects, in engineering for example, some of it, also, arising in relation to the way in which Linguistics and the whole of that field of activity is being carried through.

Secondly: within this particular system that I have been talking about there has, I think, always been a striving on the part of a number of people at any rate for what I would call excellence. By this, I do not necessarily mean that the excellence is excellence measured entirely in terms of the traditional courses, but excellence particularly, perhaps, in relation to the introduction of new courses. It is when one is doing *new* things that one wants to be quite sure, after whatever experimental period is necessary (and an experimental period *is* necessary) that one is really doing them in the best possible way. And I find that the emphasis on excellence is a point which is basic to the system. I was in the United States in the course of last summer and I was fascinated by the amount of talk that is going on in the United States at the present time about what they call the problem of "quality" in higher education. Within the British system as it has developed, there always has, I think, been that particular emphasis there.

Thirdly, is the emphasis upon the individual student and his needs, the emphasis on the *learning* process, not on the process of *being taught* --and the willingness to use all kinds of ways to do it.

Fourthly, as I have gone into at length earlier, the importance of trying to maintain inter-disciplinary interests in a world of problems rather than of disciplines.

Fifthly : the importance of being able to think within the context of the way in which the knowledge acquired at a University is being applied.

Finally : the capacity within the system of being able to take a long-term view of the *future*, and not just to respond to immediate needs, however important they are.

All those features, I think, are still there, within the higher educational scene.

Problems Today

If I turn to the immediate scene, however, I would be unrealistic if I were not to refer to the *problems* which arise in higher education in England today, as in many other places.

First of all, there has been a very sizeable cut in the amount of money made available to universities and to polytechnics and, most recently, to the Open University. There have been cuts, and some of the cuts have not just been cuts into the flesh --they have been cuts into the bone. The attitude of the Government at the moment towards educational expenditure is that there is a limited sum of money which is available for educational expenditure ; that sum has clear limits tagged on to it ; the money must be spent in the educational field --but it could include school education, or higher education or continuing education : but what one gains, the other will, necessarily, lose. Out of that same budget, also, there has to be derived the money which pays for student fees and charges. And that comes out of the total global sum and there is no way of increasing that global sum. So the task of the Secretary of State for Education and his officers in the Department of Education and Science is really to try to work out the proportions of money which are spent within the different sectors of education.

Now there are demographic changes which, of course, do influence the amounts of money which are required. We are moving into a period when the school population is falling. At the same time, this last year we did reach the peak size of the University age-group. From now on, in fact, the university age-group will go down, too, into the 1990s. So there is a certain amount of leeway to be made within the global sum for purely demographic reasons.

But having said that, supposing that one believes, as I do, how important it is to try to educate adults and to develop continuing education of the kind that the Open University does, the money for such development is bound to have to come out of the university budget, or out of the school

budget. And there are some very, very hard choices to be made within this area.

Whether, and to what extent, this policy will last and for how long is largely a matter of the economic climate and economic conditions. But these cuts have been very serious.

Now the second point that I would like to make is that while it is the task of the Department of Education and Science to decide how much money is spent on different kinds of education, it is still the task, as far as the university expenditure is concerned, of the University Grants Committee to distribute the amount of money which is thought appropriate for university education amongst the different universities.

People often ask me whether Government lays down rules in matters relating to the distribution of finances amongst universities. I do not think there has been any direct intervention by Government so far in the Universities except through the University Grants Committee. On the whole what has happened is that earlier, the University Grants Committee itself used to say to Government that it needs a certain sum of money for higher education : it explained why it needed it in terms of the number of students, the number of institutions, the kind of education that was provided. Now, with the cuts, the University Grants Committee has not been asked by the Government to give it that vital piece of information, which is how much the universities *need*. Therefore, it has had to operate within a sum of money which has really been plucked out of the air by the Government, in relation to other forms of Government expenditure. But it has then been given the very difficult task of separating it out between the different Universities. But the Government itself has not so far intervened : the decisions have come from the University Grants Committee. What the Government did do then was that it offered a very generous scheme of money for early retirement. It did that, however, only after consultations with the University Grants Committee, and it was left to the latter to implement the way in which the Government provided the money.

Since in India you also have a University Grants Committee system, I would like to discuss the changing role of the University Grants Committee in Britain, keeping in mind the more stringent financial constraints under which it has to function today.

I was a member of the University Grants Committee for nine years (which is about as long as one can be a member of that Committee). I saw it work at a very interesting time, in the late 1950s and the early 1960s, before I became Vice-Chancellor at Sussex, when all the emphasis was on University growth. Later, however, the University Grants Committee was forced to come to a decision that each university would be given a number of students which it was not allowed to exceed. If it exceeded this number, then there would be, or might be, financial penalties attached.

Now the reason why the University Grants Committee followed this policy was because of this notion of the "package" to be spent on education. Clearly, a university could take extra numbers and reduce its unit costs.

But at the same time, since every student does require a fee-and-charges element in his own maintenance, the Government wanted to restrict the number of students within the system and not just restrict numbers in particular universities. Today we are going through a rather agonizing process of trying hard to cut down our student numbers. It is an extremely difficult task in a college of 300 or 400 to know whether the numbers you are supposed to cut down fall within the ordinary margins of statistical error. But we are forced, in fact, to cut down our numbers, and financial penalties will be attached to us as a college unless we do so.

The other way in which the University Grants Committee has come into the system is that it has really discriminated between Universities in determining how much of the cuts they will take. In the past, it has always been the tendency for the University to look at the unit costs of different universities and to determine how much the university would get, on calculations which certainly took into account the levels of unit cost and the university programme in question. At the last distribution of money the University Grants Committee decided that there were certain universities which should be cut much more savagely than others. Those universities have suffered very great difficulties since ; I can think of two in particular : the University of Salford, in Manchester, and the university of Bradford (and they are not very happy about the fact that they are also now being attacked because it is claimed that now they are taking more numbers than they should have done under their numbers quotas as well). But there has been a good deal of uneasiness about the way in which the system operates.

All I would really like to emphasise is that if there *is* going to be a University Grants Committee system in a country, it must operate on a basis of mutual confidence between the unit elements in the system and the people who are running the University Grants Committee. In the past, it used to work in England in what was thought to be almost a classic form. There was a Five-Year Plan : the University was given its money for five years, it could then do what it liked with it in five years. Then there would be a so-called "visitation", and then there would be a further distribution, and if the university had not done as well as the University Grants Committee thought it had in the previous five years, it would be penalised for the next five years. It used to work in that sort of way. The five years was then reduced to three years and the three years was then reduced to one year : now, in fact, it is very difficult for a university to have any longer-term plan which could be underwritten in any way by the University Grants Committee. But the University Grants Committee would claim that a certain amount of duplication can be cut out, that there is room for rationalisation of the system in various respects.

The effect of it, I think, is that there will be something more like a University *system* in England than there has been in the past. When the Robbins Committee reported on higher education in England some years ago (the last big Report on the subject) while referring to the system of higher education, it said : "The system of Higher Education if it can be called a system..."

But I am not sure that it could really have been called a system entirely clearly, until fairly recently. However, I am sure that in future it is going to have systemic qualities—and these systemic qualities will require very careful examination.

There has been a lot of worry about the fact that, given these circumstances, the universities have had to get rid of academics. And they have had to get rid of them, in some cases, in pretty large numbers. The Government introduced a very generous Early Retirement Scheme, as I mentioned earlier, and there have been very large numbers of early retirements in quite a number of universities. In the University of Cambridge, for example, there has been quite a remarkable number of early retirements—far more, for some reason which is not entirely explicable, than in the University of Oxford. The same is the case with other Universities. So faculty have been disappearing from the Universities and leaving, in their late fifties in many cases.

Now the effect of this does not necessarily mean, of course, that those people whom the university would most like to see stay are the people who *do* stay. That is the first point, obviously so. But secondly, even despite this blood-letting process, there are also, at the moment, very, very few new post in Universities available. In fact, over the last two or three years I have had the sense of there being a kind of missing generation in the university community of the young academics who used to come in straight from their degrees as post-doctoral students, into the universities as university teachers. In the whole country last year, including Scotland and Wales, there were only two posts that were advertised in History, my own subject, and one of those was, in effect, already taken up before it was advertised. Therefore there are an enormous number of very bright and able people who have just taken their doctorates, who are not getting university jobs : they are not finding it all that easy to get jobs in other educational institutions either.

The effect upon the universities is that you will get very odd age-structures in the future. I regard a university as a place which should not only have a very mixed set of disciplines in it but also, I think, different ages, in order to complement each other. We shall, however, get some very odd age-shapes in relation to universities as a result of what has been happening. The Secretary of State for Education has been worried about this himself, and there has now been a so-called “New Blood Scheme”, in which a limited number of new university posts are being created, particularly to be filled in science and technological subjects, and those new posts will do a little to help the problem, I think. But they will not go very far, certainly, in dealing with the age-gap question.

Another problem, of particular interest to India, is the way in which it seems to me that we have lost ground—over the last few years quite seriously—in relation to overseas students : because of, first of all, the policy of discriminating fees, and secondly, the policy of charging something nearer the economic fee. I have always believed very strongly myself that the great

merit of a university is that it can be an international institution. Therefore I do feel how important it is to have students in a university who do come, wherever it is possible, from a wide variety of different countries. I think there will be, over the years, a recognition of the importance of this issue. It has been fought very hard by the vice-chancellors, it has been fought by a number of other groups in the country. In my own College we are just managing to hold our overseas students' proportion with a great deal of difficulty. But there is an increasing need to go and recruit—in a very, very careful way—and if necessary also to try to find increasing financial support in order to do it, since this has come at a time when there are all those other kinds of financial pressure that I have been describing.

Lastly, to take up another element of gloom, as it were, in the scene : the other sector in higher education which I would have like to have discussed a good deal more, the polytechnic sector, is itself undergoing quite serious cuts. A new body has been set up by the Government, which is just coming into action : a central body to deal with the question of polytechnic numbers, courses and expenditures, with a view to looking at the cost elements in the polytechnic field. This body will, I think, try to introduce some of the same elements which are already there in the university field.

The Future

In conclusion : given all this short-term gloom—which is undoubtedly there, and which I think does affect attitudes inside universities—how will it be possible to maintain that element which I think is most essential in relation to higher education : a sense of vision in relation to the future ? All the problems that I mentioned in the beginning of an academic kind, all the opportunities of an academic kind are still there. We have not got rid of the question of higher educational development merely by cutting the amount of resources available for higher education.

I would argue that we do need, in relation to the higher educational scene at the present time, first of all, some pretty strong leadership. And I think the leadership will be increasingly important within the university itself—within the single university as an institution. Certainly the effect of the cuts has been to turn a great deal of attention towards the internal management of the university and the way in which its own priorities are set. But it is very, very difficult in a university if the effect of the cuts is to make everybody worse off and not, as it were, to think carefully about what are the priorities in such circumstances. So I think more and more importance will consequently be attached to the qualities of leadership, which includes managerial leadership, in relation to the units of higher education.

Secondly, I think we will need to continue to generate academic ideas at the grass-roots level. I have never, myself, regarded universities as being service-stations of society alone. I think their role is to act as centres of initiative in society, the places where new ideas emerge in society. Therefore I think it is necessary to pay particular attention to ensuring that in ageing

university faculties and so on there is an adequate up-thrust from below, inside the universities themselves. Indeed, I would hope that there will be sufficient sensitivity within the University Grants Committee to the development of these Centres of initiative during the course of the next few years, because certainly learning does not stop because of financial problems.

Thirdly, I think it is necessary to pay much closer attention to the relationship between universities and schools. I have said very little about this. But it is no longer possible to take for granted, in Britain at any rate, that there is going to be an automatic intake into the universities from schools. There are many signs in schools that a larger proportion of the age-group is not wanting to go to university at all, as compared with the past. If that were to happen it would, of course, be one way of dealing with some of the problems of cutting the numbers, which the Government itself thinks is important. But suppose the people were to be concentrated in the lower income-groups of society where there is not very much knowledge of the full range of educational opportunity even now? We would, I think, by moving towards a serious social gap in our society which would have very disastrous long-term consequences. Therefore we do spend a great deal more time in universities on bringing in headmasters, headmistresses, VIth Form masters in schools, to talk to them about our mutual problems and about the opportunities which are available inside universities, and how we could really establish closer relationships between each other.

Fourthly, I think we have got to get some answers to all these vast problems which are there of life-long education. The Open University has proven that adults in large numbers *do* want to continue their education, to have a second chance if they have not had the first chance (even if they *have* had the first chance, to continue on the basis of what they have already learnt); it has proven that they are very highly-motivated people who want to do this and that they are prepared, in fact, to put up with all kinds of difficulties in order to do so.

I believe that these pressures for life-long education are going to increase. I believe that in the long run the university will become a Multi-aid institution, both as far as its students are concerned and as far as its Faculty is concerned. One of the effects of the changes that I have mentioned is that there are far more older people going to universities now—not just the Open University, but going to all universities, than was the case a few years ago. In some universities now the percentage of people going to university who are over the age of 25 is over 25%. This change in the composition of universities seems, to me, to be a portent in some respects for the future.

However, if more money is going to be spent nationally on continuing education, then so long as the concept of the “package” or “limited package” is there, that development is going to have to take place at the expense of something else. What is going to take the place of is the crucial question.

I come now to my very last point, a matter of some concern to all those of us who are interested in higher education in England: What is the public demand for higher education in our society? And how does the demand

for higher education relate to the demand for other things, like health, or housing ?

This is a fundamental question in relation to the future. It seems to me that nearly all the complex problems which we have to deal with in our own societies are problems that do require *more* education rather than less : Education not only of an expert kind, to guide people who will be dealing with and trying to work out answers to problems --but education which will enable people who are themselves involved in the programmes to be able to appreciate what the opportunities of the programmes really are. I think it is only going to be by showing the relevance of the educational dimension to other forms of national policy that we will be able to find adequate resources to develop the higher educational system of the country along the way which I believe to be necessary.

The point is that with all the difficulties and problems, higher education is extremely important. It used to be very fashionable to talk about all this in terms of races and in terms of comparisons between one place and another. Those comparisons are not very fashionable in the present time. It used to be very fashionable to talk of higher education entirely in terms of a National Investment : that is not very popular talk now. What we have got to do now, I think, is to find talk which will show that unless we *do* get the higher educational scene right, a lot of other scenes in society will certainly be wrong.

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The University as an Institution: Present Problems and Future Trends*

DIETRICH GOLDSCHMIDT

In speaking about "the University as an Institution" at this International Congress we must be concerned first of all with those features which can be found in almost all university systems. Indeed, despite important variations, national university systems show many similarities that cross international borders. International relations in science and scholarship, as in other areas of public life, are becoming increasingly interwoven. The development of mass higher education in the past 35 years underlines also the uniqueness of each national university system within "its" own society and in its relation with "its" particular government. Nevertheless, science is predominantly international, and the general expansion and increasingly pragmatic orientation of post-secondary education is an international trend.

My theses shall be confined primarily to what seem to be general trends in the development of almost all national systems. For this reason and because of the limitations of space, I shall abstain from any attempt at systematic institutional analysis of each of the innumerable systems. However, I may refer to specific national developments in order to present a clear picture of the particular framework in which each individual system has to operate.¹

The modern university—a universal institution developed in Europe and the USA—serves nowadays as the main part of tertiary education in almost all countries of the world. UNESCO statistics show that student enrolments which exploded from the early sixties to the mid seventies are still growing—though somewhat slower—in many countries of the world, although the optimistic belief of the sixties in educational expansion as a tool for economic and social development has disappeared or is disappearing in most

*Spotlight at the Congress "Higher Education by the Year 2000" Frankfurt.

countries. Enrolments will probably grow further until the end of the century, particularly in countries of the southern hemisphere, especially those with expanding populations (cf. appendix).²

The continuing growth of many national systems shows that even in poor countries many governments are giving priority to social demand for higher education and are hesitating to limit admission of students to the universities according to manpower needs. In fact, contrary to the scepticism of experts¹ with regard to the adequate degree of expansion desirable for economic and social development and the appropriate curricula, university education as it has developed under Western influence is still considered to serve best the social and economic promotion of the individual. To this extent governments are also acting under pressure from influential parts of the public, whereas in many countries little regard is given to the actual need for academically trained personnel and to the need for corresponding curricula.

National university systems have grown in two ways :

- by enlarging many old universities ;
- by founding new universities.

In most cases universities of either type have grown to such an extent that they have lost their character as closed academic communities of masters and students bound together by fairly common academic life and ideals as well as by common methods of learning and research. Universities have developed into multiversities. (cf. Clark Kerr : *The Uses of the University*. Harvard University Press, Cambridge/Mass. 1964).

Mass education and growing specialization have in many cases led to structural change in two directions within the multiversity : firstly, decentralization of the functional units such as Departments, Colleges, Schools, Research Institutes; and secondly, the growth of an all-embracing central administration along bureaucratic lines.

Nevertheless, to improve the quality not only of the education offered, but also of academic communication, social life, and even administration, one should aim to stop any further growth in the individual units as well as in the all-embracing administrative machineries. (It may be noticed that in Great Britain, where growth at least until now has occurred partly through the establishment of new universities rather than expansion of the existing institutions, decision-making continues to be relatively informal and the expansion of academic administration has been held in check).

However, in view of the political weight and the financial burden of the universities as mass institutions, governments show an increasing tendency to make universities accountable to the public and to strengthen central control of finances for teaching and research, of personnel appointments and of curricula.

The extremely rapid growth of post-secondary education has led to a continuing shift in the relationships between the various governing units.

- within the university systems, that is to say, between levels such as chair/institute/department ; faculty/school/college ; single campus university ; multicampus cluster and
- at higher levels like state and national government.

These relations determine the extent to which the universities on their different levels can exercise institutional autonomy. These relations also determine the degree to which government and society can supervise them while planning their development and stimulating innovation. This question, which is linked to that of academic freedom in teaching (incl. planning of curricula) and research, has been one of the central themes in university history. It will become still more important in future.

In principle, teaching and research are obviously stifled when rigidly controlled, but they also suffer when they are entirely free from any social accountability. Faculty members and boards in making decisions on their academic work need a vis-a-vis, a partner to whom they are accountable. This partner may be a state authority, their own university administration, or a foundation -any body to which they must periodically demonstrate the scientific and social relevance of their research and their teaching, particularly as the latter has a bearing on occupational education. This in turn grants them the necessary autonomy and resources while mediating social demands.

The lack of such accountability is particularly evident in Italy. The other extreme of political and bureaucratic control occurs not only in socialist countries and many developing countries but also in a Western country like Sweden : this extreme endangers scientific and scholarly progress through undue restrictions on teaching and on research freedom.

The more modern universities become institutions for mass education and at the same time the modern arts and sciences become more and more sophisticated and specialised, the less it is feasible to aim at the unity of teaching and research as proclaimed by Wilhelm von Humboldt, founder of the University of Berlin, and his contemporaries in 1810. This idea continues to be preached today. However, in most countries education of undergraduates is separate from research and training for research. This tendency will become even stronger the more mass education spreads. Research and training for research have specialized in almost all disciplines.

By organizing graduate and professional schools separately from colleges, the American universities have developed a remarkable way of coping with these two distinct tasks of the university. This is true despite the fact that on the one hand many colleges do not provide research facilities and that on the other many research organizations and institutes are not at all or only loosely linked with universities. In other countries much research and training for research are tasks of separate institutions, like the Centre National de Recherche Scientifique (CNRS) in France or the academies of sciences in socialist countries.

From the mid-sixties to the early seventies the universities of the so-called first world—from Western Europe to the USA and further to Japan—have been shaken by the student revolution: Democratization was to be accomplished by dissolving traditional hierarchical structures of decision-making, mainly in the hands of senior professors (“Ordinarii”). Representatives of all groups involved—senior and junior faculty, clerical staff, students as well as—in some countries—trade associations and trade unions—were thought to reform the universities organizationally and to develop new curricula. At the end the universities were to become nuclei of general social and political reform. Most of these attempts failed, high flying ideas remained dreams. What is lasting are some new structures for internal decision-making, giving a little more weight to junior faculty and to students as far as they would still show interest in university affairs. Concepts for new curricula accentuating social and political concerns in many disciplines boiled down to some modest attempts to adapt teaching methods to the new situation of mass instead of elite education. Other developments since World War II—universal expansion of higher education, growth into systems of mass education disintegration into multiversities, increasing split between teaching and research, and diversification of the individual institutions in the realm of tertiary education, last but not least the bureaucratization and the growing state influence—have changed the universities far more than the student revolution. However, the admission of millions of students to higher education represents a major feature of democratization in most industrialized countries—leaving us with the questions of the students revolution about aims, methods and quality of mass higher education not yet solved satisfactorily.

In general, government and university policies all over the world with respect to the education of undergraduates have three tendencies in common :

The abandonment of “liberal education”, or of education in the traditional humanistic sense of “Bildung”. This tendency can be observed all over the world (even in England or in the USA, except perhaps at some prestigious, usually old colleges), despite lip service to the contrary at solemn assemblies.

Control of the political activities of students and faculty, in many countries combined with political education as a kind of replacement of traditional general education—be it in the sense of teaching theoretical concepts, or in a more pragmatic sense of studies on current political, economic, social etc. affairs.

Concentration on professional education and the structuring of programs with rigid course requirements more and more similar structurally to those in secondary schools.

As an outcome of the concentration on the occupational education of millions of students the relationship between education and occupation has become the key problem of university education. This emphasis prevails

in rich and poor, in capitalist and socialist countries, at present and probably for the decades to come. Curriculum planning and the selection of relevant content and methods of teaching have acquired an importance never known before. The problem has many aspects. I should like to enumerate five of them :

- (a) There is first of all the quantitative problem of the appropriate distribution of students in the different subjects, i.e. the proportion of students pursuing education in the humanities, the social sciences, the natural sciences, or technology. Only in recent times many so-called developing countries have built up, quite rightly, natural sciences, technology and medicine at their universities in order to meet their urgent needs in the related vocational fields. Nevertheless, in general one must be concerned in all countries of the world that the humanities and the social sciences do not lose their impact on coming generations of students. Changes in quantitative distribution are leading to qualitative changes as well ! Only by preserving as much of the history and culture of the specific countries as possible will it be feasible for each country to establish a delicate balance between universal cultural traits and its particular cultural tradition and significance.
- (b) There is also a further qualitative problem with regard to the curricula for the different subjects. Traditional general education is out, but the task ahead of us is to develop curricula which would enable students while specializing in subjects relevant to their future occupation to become acquainted also with intellectual, social and cultural elements, their importance and their impact on society in general; i.e., to gain some new kind of general education by thorough analysis of their special field of interest and clarification of specific social responsibilities in these fields.
- (c) The next problem is linked with the foregoing one. As university education increasingly becomes occupational training, it is important to include periods of practical vocational training and to reflect the students' practical experience in further university courses. Practical work on the other hand should not be learned without reflections about its general social, economic and cultural implications and obligations ; however, theory should by no means be confined to considerations of vocational practice.
- (d) With the advent of mass education an aspect which was once a matter of course has gained particular emphasis : As far as possible teaching should always imply some "research" tasks for the students —no matter if these tasks have been solved already, or if they are really new. Students must learn to solve problems and should not be encouraged to rely on rote learning only.
- (e) Mass education poses one more particular problem : The arts and sciences rely on international communication and exchange ;

general international communication has become more intense than ever before ; the welfare of mankind in the year 2000 and beyond has become a common concern all over the world. Nevertheless, many of the "new" students come from modest or very traditional social backgrounds and have grown up with limited or very different perspectives and expectations. The students' narrow occupational orientation and the resulting low popularity of "unnecessary subjects" support the tendency of economizing administrations not to include courses with international orientation, particularly foreign languages, in the curriculum or to limit opportunities for optional participation. The growing interdependence of nations requires us to pay more attention to foreign languages and cultures, to international exchange of teachers and students, and not less.

The more university education loses its elite character derived from the European and American traditions and the more it is oriented towards the goals of occupational training, the more the university as an institution becomes an integrated part of post-secondary or tertiary education in general. Its criteria for admission become more flexible by acknowledging appropriate qualifications ; the borderline to other colleges, to polytechnics etc. becomes more permeable (cf. USA, France) ; some countries (FRG, Sweden et al.) experiment with "comprehensive universities" etc. In general : With their enlargement and their growing interdependence with national social systems, universities are more closely integrated into national educational systems than ever before. Therefore, the device -applied e.g. in Unesco statistics -of distinguishing between institutions of university and of non-university type is only of limited value ; it cannot properly account for the uniqueness of each national system and the academic standards of its institutions. However, the growing diversification of institutions does not prevent the development of rather sophisticated hierarchical structures and corresponding prestige scales in most, if not all countries.

As the impact of political, economic and social accountability and the pressure towards occupational education grow, old and new universities intensify activities devoted to the immediate educational and research needs of their respective regions. Old traditions of applied scientific work -land grant colleges in the USA, technical universities in Germany--are gaining particular weight in industrialized countries, but are still far stronger in so-called developing countries.

As a result of such activities new educational reserves will open up. Close ties, for instance, between teaching-and-research centres and local or regional business and administrations can stimulate economic activities. The establishment of new medical training centres improves medical care. In developing areas technical colleges combined with their own production plants and workshops ("productive schools") can improve the quality

of technical training, of manufacturing processes and of business management. Regionalization in general represents a step towards democracy in the sense of improved educational opportunities for all; and the wider distribution of educational institutions assists indirectly in restraining the growth of large conurbations.

In the USA one of the traditional roles of some colleges and universities is their direct participation in the solution of the social and economic problems and educational tasks facing the individual towns and states to which they belong ("urban involvement"). In several European countries (France, Italy, Sweden) very recent reforms have explicitly included decentralization and the stimulation of local initiatives among their objectives. These developments could be important in developing countries as well. How far they will proceed in industrialized countries remains to be seen.⁴

A further outcome of the stronger linkage between the universities and their social environment on the one hand and of the growing demand for ever higher education on the other is the provision for further or continuing education at the universities. Universities have started to participate in what is called adult education. In a world of more and more rapid technological, economic and social change continuing education in technical, economic and social fields is becoming more and more important also for people who have gained vocational experience already. Furthermore, due to demographic reasons the age structure of the student body as a whole may well have changed by the year 2000. Older age groups may be more strongly represented in many countries than they are today. As a result, the process of teaching and learning will take on a new shape : In many courses a growing number of participants will be motivated by their professional experience and will contribute from it. For many of these students, perhaps more than for others, questions about the relevance of their occupations and about their position within societal development will become vivid and pressing questions.

Experiments like "university without walls" in the USA ; recent developments in the decentralization of higher education in Sweden ; the success of the Open University in Great Britain ; the equally impressive work of the University of South Africa (UNISA) in Pretoria with its telecommunication and library service ; and, on the other hand, the teaching of evening and correspondence classes in the USSR : all of these schemes are worth careful observation in view of the tasks ahead of all university systems by the year 2000.

In most countries research and training for research were traditionally integrated in, or at least organizationally bound to, colleges and universities. As they are becoming more and more separate tasks they may require special organizational provisions or even more independent institutions than can be found today. However, I should like to stress function and effect of research within higher education. Furthermore, we have to ask what guidelines for practical action arise from a society's policy towards scientific research, its aims and objectives.

Research provides stimulus for and is in turn stimulated by teaching ; it services pre-eminently the training of future researchers. It is even more important that time and again distinguished scholars, attached to graduate schools or research centres, make it their obligation to teach undergraduates introductory courses of their subject. They should let the students share their specific and their broader professional experience.

Evident disadvantages of academic research within a traditional university setting stem from the fact that the intensity of the research is often considerably lessened by the scholars' occupation with teaching duties and faculty self-government. However, it should not be overlooked that the organizational and personal connection of research with teaching can easily turn to the detriment of teaching, since, unfortunately, research is generally considered more attractive and gratifying. It offers the scholars better career opportunities !

The substantial problems of science policy lie simultaneously in determining research priorities and in deciding official competency for the areas of organization, funds and personnel. Those who determine priorities must above all resolve rival claims when distributing resources, for instance, between.

- the humanities, natural and social sciences, e.g. space and space flight research as opposed to research into urban renewal ;
- pure vs. applied research ;
- research in only single disciplines vs. problem oriented multi- or interdisciplinary research ;
- research concentrating on national problems of immediate interest on the one hand, and on the other hand research on urgent international problems which are not everywhere immediately relevant nationally and which may also not be soluble on the national level, such as
 - research on such global problems as the world's available resources (energy, raw materials) and their management, environmental protection, basic human needs, population expansion, redistribution of wealth among nations, peace ;
 - research dealing with specific problems of developing countries.

The more important given problems are, and the more costly the research is, all the more will the priorities be decided on levels above those of individual institutions of higher education. The key decisions whether concerning large national research programmes such as atomic research, and space research, or concerning the total budget of universities (private colleges and institutions in the USA and Japan are the exception), are in any case made by the governments involved. Yet, in many places research on smaller scale by colleges and universities, precisely in connection with teaching and supported by relatively stable budgeting, has at its disposal the necessary degree of basic apparatus without having to rely on special

projects, and thus enjoys a relative independence in comparison to many governmental and private institutions which work by contract. Tradition permits university research to keep research areas going which would probably be rationalized away if they were to be shifted to other research institutes. Its relative independence helps to assure adequate pure research in the academic disciplines, incl. humanities which otherwise are easily neglected.

A more fundamental consideration may be devoted to the fact that inter-disciplinary and problem-oriented research has so far been developed as university research in relatively few institutes and with various degrees of success. Its necessity is ever and again clearly apparent in many burning problems—one has only to think of the above-mentioned global problems—and in the corresponding educational needs. But universities are known for their overrigid adherence to long established academic disciplines, for their lack of practical relevance in many subjects, and especially for their failure to combine the solutions of the natural and technical sciences with those of the social sciences, when dealing with problems which concern them both ! So far, problem oriented research has been brought closer to a solution by institutes and task forces established for specific problems rather than by academic institutions.

The universities respond to this criticism by pointing to difficulties that can only be solved on a case by case basis :

- the maintenance of methodological standards appropriate to each discipline.
- the development of co-ordinated and agreed methods which are appropriate to an inter-disciplinary approach to the object under consideration.
- the organization of institutes which do not contravene or disrupt the overall organization of the university.
- the consideration of the personal career interests of the researchers.
- the cost of such research.

However, the conservative trend to be observed in the educational and research policy of many countries at present causes extreme concern. To find the appropriate balance between disciplinary and problem oriented research and education is one of the most urgent tasks which the systems of higher education have to face on their way towards the year 2000.

Some final remarks about my perception of university development may be in place. My treatment of present problems and future trends of the university as an institution may sound fairly cautious, conforming to the situation and to the development as they are to be found at most places. However, my task here was careful observation, an institutional analysis but not the development of new concepts or theories for the work of universities. In addition, this approach meets my own view of the general situation : Universities no longer even make a pretence of being what was

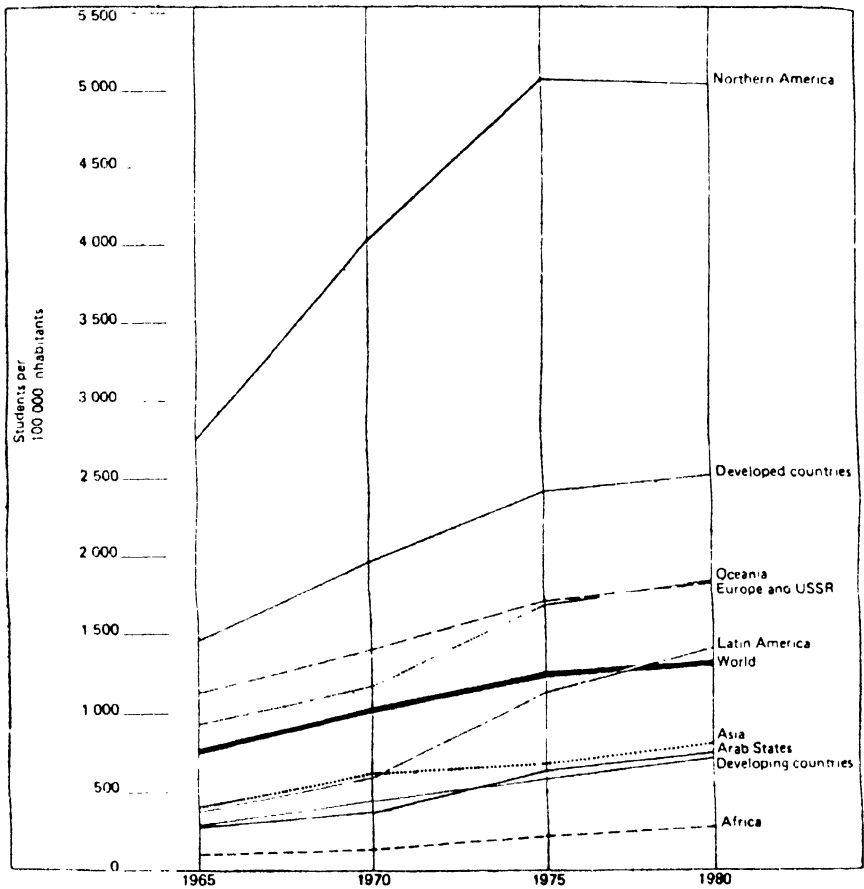
expected of them since the time of Enlightenment : that by their work in research and teaching they would pursue truth, an endeavour which in itself would have an educative effect and would foster progress of mankind. As I said before : neither "liberal education" nor "Bildung" nor political activities are dominant goals today but rational intellectual training, vocational preparation and value-free research. More demanding and even nonconformist challenges are not ruled out ; on the contrary : where they are brought forward they are in many countries welcome as an additional contribution. The universities are expected to provide adequate platforms for initiatives of this kind ; in their service to society they should also be safeguards of intellectual freedom and social criticism. To this extent they are felt to perpetuate their Enlightenment tradition. But they cannot do much more. As a mass institution depending on public funds probably no university can in its general planning be geared for much more than intellectual, yet particularistic exercises in teaching and research. More far-reaching considerations, the call to make humane use of science, the concern that science be developed as a productive force for human society and not as a destructive one, the search for universal reason, for peace and justice are challenges to be met first and foremost by committed teachers and students themselves. As an institution, the university is not a moral foundation or a church, nor can it replace such institutions. Above all it is the task of teachers and students alike to strike the balance between their functional service to society, particularly in their professional performance, and their moral obligation that derives from striving for universal reason.

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Appendix

Number of Students at Tertiary Education
(Not including China and the D.P.R. Korea)



Source: UNESCO: Statistical Yearbook 1982, Paris 1982, p. III-10.

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Notes from Research

SOCIAL COSTS OF RESERVATION IN HIGHER EDUCATION : A DECISION THEORETIC VIEW

Policies and practices in general, with regard to reservation as applied to scheduled castes and scheduled tribes can be conceptualised to cover three broad, but distinct areas :

- (1) Safeguarding of political rights.
- (2) Ensuring a fair share of employment opportunities.
- (3) Enhancing opportunities for higher technical, scientific and professional education.

The avowed intentions and motivations of the founding fathers of our Constitution, while they were making legal provisions pertaining to reservations for the weaker sections of the community, like scheduled castes, scheduled tribes, and special minority groups, are not difficult to reconstruct. A quick perusal of the basic ingredients of the constitutional safeguards will make them clear :

- (a) Protection of the weaker sections from exploitation.
- (b) Guaranteeing rights to equality.
- (c) Progressive abolition of disparities of various types (such as untouchability).
- (d) Fostering of promotional, nurturant and protectionist functions of the government for helping weaker sections of the community (such as reservation of jobs).
- (e) Categorical reservation of *political* rights, by providing reserved constituencies, for returning representatives to legislatures, at the Centre and at state levels. (Originally this was provided for ten years, but the period has subsequently been extended).

It has been pointed out that while reservation has been categorically laid down in the economic sphere, and political sphere, such has not been the case in the educational sphere. Providing for equality of opportunity for receiving education at least at the primary level, appears to have been accepted. However, the states were free (according to Article 15(4) in Part III of the Constitution to make special provisions for scheduled castes and scheduled tribes.

We may posit that a liberal, democratic, egalitarian, and humanist type of motivation, with commitment to social justice, dominated the constitution makers, while they were engaged in prescribing legal provisions for the scheduled castes and scheduled tribes. A certain extent of margin was allowed to the states for supplementing the basic provisions, in operational terms.

In recent times there has been a spurt of writing on the implications of the reservation policy. The constant refrain for most writings on reservation policies is a reaffirmation of faith in the wisdom of the founding fathers of the Constitution, for making legal provisions in the field of reservation. There is generally a reiteration of the argument that one of the major justifications for reservation rests on the need of undoing the injustice and exploitation to which the members of the scheduled castes and scheduled tribes have been subjected over centuries.

This writer has no intention of challenging or questioning the arguments which assume an impassioned and moral posture, even while it is not difficult to see certain basic weaknesses in the logic of such arguments.

It was perhaps beyond the founding fathers of the Constitution to foresee far ahead into the future course of history, with any degree of accuracy. The sophisticated calculus for predicting the sorts of outcomes that would necessarily follow, over a long period of time due to the implementation of reservation policies, was simply not available to our Constitution makers. Most writers show a lack of awareness of this fact. On the contrary, there is a singular absence of critical assessment of certain major parameters of the constitutional provisions in the sphere of reservation. This could be done on four major counts.

First, the need for building in some sort of flexibility and self-correction into the system, of measures formulated originally, as they reacted with the unfolding processes of historical reality, was neither fully appreciated or carefully articulated.

Secondly, there was a blanket lumping together under the protective umbrella of reservation three disparate areas, viz., political rights, rights to employment, and educational opportunities. That the impact of reservation is unique for each area was hardly spelled out explicitly. There is the basic requirement of considering 'social costs' and social benefits' of decisions from laws related to the three separate areas of reservation. These are likely to differ from one area to another. The social costs and benefits related to reservation of quota for jobs are not necessarily commensurate with the same, when it is extended to reservation of quota for seats in institutions, of higher, technical and scientific education. Put in modern social science language, the deeper implications of cost-benefit analysis, in terms of the community which is sought to be made the preferred beneficiary, i.e., the scheduled castes and scheduled tribes, and the entire society, of decisions flowing from implementing reservation laws into the field of higher education, have yet to be gone into.

Thirdly, there was scarcely any attempt to distinguish between long term and short term goals, and measures to achieve the same. There was hardly any recognition of the wisdom that really good decisions are *sequential* in nature, subjected to self correction through built-in monitoring devices. It is true that Dr. B.R. Ambedkar, acknowledged as the chief architect of the edifice that the Indian Constitution undoubtedly is, had apprehended that prolonged reservation would damage the interest of the scheduled caste members in the long run. Short term privileges can work as crutches for rehabilitation, to be discarded when normalcy is restored. But long term dependance on crutches only tends to perpetuate infirmity and weakness. This is a danger before the weaker sections of the community. This is apt to be lost sight of, because the danger is not immediate, while the advantages are visible and immediate.

Fourthly, there has been neglect of the psychological angle. The enjoyment of privilege by one section of the community, produces animosity and jealousy among those who are denied the same privileges. This increases the psychological distance between two sections of the community, which is certainly an unwanted outcome of the entire social planning process. How much effort has been spent to educate the community, so that all

realise that the privileges bestowed upon one section are not undeserved gifts, but much needed assistance to eradicate age long disparities, which hold back the entire nation ?

Reservation in the Field of Higher Education

It has been pointed out earlier that the deeper social implications and impacts of the policy of reservation in the field of higher education, specially technical, scientific and professional education, are qualitatively different from those in the field of job reservation and providing separate electoral constituencies. Politicians, administrators, bureaucrats and social planners have either played down their significance deliberately or glossed over them, when not ignoring them. But developments like the agitation launched by the medicos in Gujarat have underlined the fact that those who are directly affected by the reservation provisions think very differently indeed. The whole matter of reservation of seats in the sphere of higher education has assumed considerable importance and has generated a good deal of controversy.

Even within the sphere of higher education, the provisions for reservation vary from state to state, from institution to institution, from subject to subject, and even from one client community to another. No useful purpose may be served by trying to list these provisions. A more useful purpose may be served by giving a summary of such provisions :

- (a) One type of reservation ear-marks a certain proportion of available seats for members of scheduled castes and scheduled tribes, for different types of courses, such as engineering, medicine, science, law etc.
- (b) In certain cases, there is a provision of 'interchange' between scheduled castes and scheduled tribes, if the number of applicants in one community is smaller than number of seats ear-marked for it, the balance being offered to the other community.
- (c) Again, there may be provision for 'carrying over', of the reserved quota, from one year to the next, if the full quota is not filled up in any year.
- (d) The minimum level of marks required for qualifying, or admission to special courses may be lowered for Adivasis and Harijans.
- (e) There may be provision of financial assistance, and scholarships specially ear-marked for Adivasis and Harijans. The qualifying standards may be liberalise for applicants of these communities.
- (f) The maximum age level for enrolment in certain courses may be raised for Harijans and Adivasis.
- (g) The minimum level of marks required to be earned for being declared successful in examinations may be lowered for these two communities ; this will also apply for promotion from one class to the next higher class.
- (h) Diverse types of pecuniary concessions may be granted to communities belonging to scheduled castes and scheduled tribes in the sphere of higher education : for example, the cost of admission or application forms, or examination fees may be lower compared to the same for general candidates.

A preferentially protective character is the thread common through these diverse measures for helping members of the disadvantaged communities seeking higher education. And that is consistent with the major motivation of the constitution makers, so far as their immediate, and short-term character is concerned. However, when their delayed, distal, long term aspects are taken into careful consideration, we note that certain complications arise, indicating serious lacuna in the chain of reasoning, in the bunch of reservations pertaining to the domain of higher education.

When a nation ordains that every child has his right to receive free primary education, or that every individual must have guaranteed employment opportunities, the major concern is the short-term needs of the individual *qua* individual, transcending his inherent strengths or weaknesses, flowing from such incidental facts like nativity, caste, location,

religion, etc. However, when it comes to opportunity for higher technical, scientific and professional education, there is an important component of social investment involved in it. The state provides costly resources for institutionalising such type of education, not merely because some individuals desire to have such education and training, but also because the state is in need of certain types of specialised *services* from qualified persons, called professionals and experts. The state is ready and willing to make available valuable resources in order that a ready supply of professional experts and specialists, possessing a certain minimum level of skill and competence is available to form a pool, and the community is assured of receiving services of a minimum guaranteed quality from this pool.

There may be a very small number of learners who want higher education for its own sake—something like “Arts for art’s sake”—they are not thinking in terms of selling their services, as experts, specialists or professionals, after they have achieved a high level of proficiency and competence in branches of knowledge chosen by themselves. But this small section apart, the majority of aspirants for higher education desire to enter a profession, where they expect to receive a handsome price for the high quality service sold by them to the community: they have gained the expertise through hard, costly, arduous, and demanding training.

It is clear that the entire technology of higher, sophisticated scientific and professional education, in contrast to general education for the masses, bears a similarity to productive enterprises to which method of economic analysis can be applied. It means that it is legitimate to apply methods like input-output analysis, cost-benefit analysis, or decision theoretic analysis, to evaluate the economic viability or ‘worthwhileness’ of this type of enterprise. Society is investing its scarce resources into the domain of higher technical, scientific and professional education. That is the *cost* or *input* side of the investment. The amount and quality of ‘service’ received back from the trained professional, specialists and experts, is the *output* or *return* side of the economic enterprise. A cost-benefit type of analysis, or more appropriately, a decision theoretic type of analysis is logically tenable in the domain of higher technical, scientific and professional education, specially as it applied to the measures of protection and preferential treatment offered to scheduled caste and scheduled tribe applicants for higher education. The community will like to know how the magnitude of the return is affected by the implementation of the reservation policies in the field of higher education. Such an analysis is called for, because the community has the right to demand a reasonable return from the investment made by it in a particular enterprise. For the type of services the community is ready to purchase from the experts, specialists and professionals, their quality, their level of sophistication, their excellence in terms freedom from errors of judgment, assume supreme importance. For receiving professional, and technical services, the community makes payments twice: one, indirectly, while setting up, and maintaining institutions of higher and professional learning and meeting the costs, generally a part of it, of training of the future experts and specialists; and again, a second time, when paying the fees of the lawyer, engineer, doctor, etc. If these services are nationalised, then community pays taxes for maintaining the institutions where services can be obtained for nominal or token payments. In such transactions, which in essence is commercial in nature, between two parties, the community on one hand, and the professional experts and specialists on the other, the rights of the buyers and of the sellers are both inalienable. The buyer’s insistence on a minimum quality or level of the service he purchases is inherent in this right.

Decision Theoretic Analysis of Selection Policies

The arguments that have been put forward so far are straight forward and simple. However, when the implications of reservation policies in the field of higher education are probed a little deeper reaching to their operational outcomes, we see that there are certain complexities which are related to the quality of decisions that follow implementation of the policies. It is common place knowledge that whenever a situation calls for allocation of scarce resources under alternative and competing heads, the return from the

investment is a function of the quality of the decisions made. Decision theory in the science of analysing the quality of decisions, specially when probabilities can be assigned to decisions leading to different outcomes.

Two terms, 'decision' and 'strategy' should be defined here, as these are used rather loosely in day to day parlance. 'Decision' is the process of selecting one out of a set of possible alternatives that will satisfy some criterion of attaining a desired goal. A 'strategy' is a *rule of behaviour*, covering all possible eventualities, following the implementation of decisions. A strategy is always defined beforehand, before making the decisions. Further, most social situations representing conflicting interests generally have a number of alternative modes of action for attaining the goals of the contending parties. Each of the alternative courses of actions, constituting the 'solution set', is associated with specific pay-offs, variously called rewards, benefits, or reinforcements. Instead of certainty, if there is a certain probability associated with the pay-off, then the appropriate term is 'utility'. It turns out that for a given situation, the different alternative situations can be evaluated, or ordered or ranked, in terms of the pay-off or utility accruing to it. This provides a calculus for assessing the quality of decisions, referred to earlier. Lastly, in many situations of conflicting interests the pay-off structure, i.e., the combination of pay-offs attached to the different alternatives, may be such that they point to certain strategies, which will be optimum for all the contending parties in the conflict. Von Neumann's famed 'minimax' principle is an example of such an optimal strategy. Pareto's 'welfare function' is another example of a search for an optimal strategy, in the field of economics dealing with allocation of scarce resources under different competing heads, where, in addition to considerations of return from the investment, social welfare and social justice needs are also sought to be fulfilled.

During the last two decades decision theory has been sought to be applied in the field of personnel selection, placement and training, the pioneering work for which has been done by psychometricians like Hubert Brogden (1946), Robert Thorndike (1949-1950) and Lee Cronbach (1957). The foundation of the theory of selection, placement and training, has been provided by the developments in aptitude testing by psychometricians and specialists in tests and measurements.

Following Cronbach (1970), we may say that a 'proficiency' test measures ability to perform some task significant in its own rights. Again, in 'aptitude' test is one intended to predict success in some occupation or training course, like engineering, music, mathematics, medicine, driving a locomotive engine, or flying a commercial aeroplane. Psychometricians and experts in tests and measurements have developed a large number of valid aptitude tests, for successful prediction of future performance, in a number of jobs, requiring very different types of skills. Prudent use of such aptitude tests can help in making personnel decisions optimal. This inter-relationship between the predictive validity of aptitude test and quality of decisions for personnel selection, may be explained with the help of an example, from the field of higher technical education, say selection of candidates for imparting training as commercial pilots.

Fairly efficient tests for measuring flying aptitude have been developed. Such a test is a good predictor of future performance in flying aeroplanes, after undergoing a course of the required pilot training. In statistical language, this means that scores made *now*, before the training, correlates appreciably (i.e., significantly above chance level), with future performance scores in tests of flying, after completing the training.

Like most psychological tests or academic examination results or selection tests, the validity of such an aptitude test will be less than perfect. If this test is administered to a large group of unselected candidates for pilot training, and all of them are then admitted to the pilot training course, and after completion of training are tested for proficiency in flying planes, the inter-relationship between the distributions of the scores made by the group on the aptitude test before training, and scores made by them in the flying proficiency test at the end, can be represented by an oval shaped envelope for the scatter plot obtained from the two sets of scores. This is illustrated in Figure 1.

Two cut-off lines have been drawn : one at score of 95 for the aptitude score, and another at 150 for the final proficiency test in flying. On the basis of accumulated experience

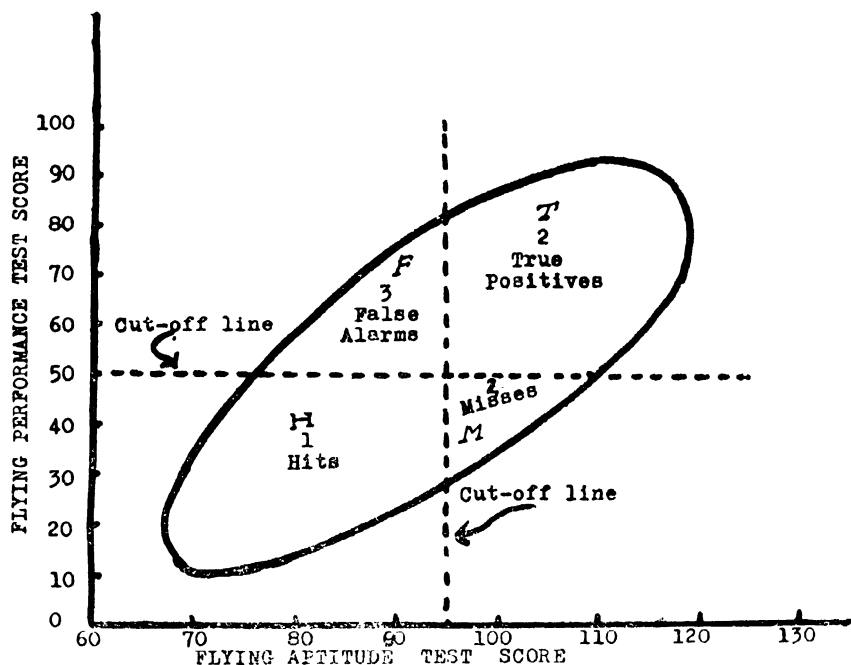


Figure 1. Envelop of scatter plot of scores in a Flying Aptitude Test as predictor, and a Flying Proficiency Test as the criterion, divided into four sections, by two optimal cut-off lines.

of previous testing results, it is decided that those applicants who get scores below 95 should be rejected for admission to the pilot training course : and those trainees who get below 50 in the final flying proficiency test are not allowed to take up the profession of flying planes. The two cut-off lines divide the scatter plot envelope into four parts or sections, named H, T, F and M.

(1) The section called H consists of those candidates, who got low, non-qualifying marks in the aptitude test, and also failed in the flying test. These are called *hits*, because these were the poor applicants, who proved to be failures, and have been picked up correctly by our selection test : these candidates scored poorly in the aptitude test, and after training they failed in the flying test.

(2) The section called T, consist of those candidates who got high scores on the aptitude test before training, and they also passed the flying test after completing training. These are also hits, and are called *true positives*, because they have been correctly picked up by the aptitude test as potentially successful pilots.

(3) The section named F, consists of those candidates who got low scores in the aptitude test, but after training got passing marks in the flying proficiency test. These are the *false alarms*, because these cases, due to their poor scores in the aptitude test, would have been wrongly denied admission to the pilot training course, in which they did well, after training as shown by their getting pass marks in the final flying test.

(4) This section called M, consists of those cases who got high scores in the aptitude test, but after training, failed to obtain qualifying marks in the final flying proficiency test. These are the *misses*, because our aptitude test missed these applicants who were potentially poor material for flying planes : they would have been wrongly admitted to the course, for which they proved to be unsuitable.

A really good, satisfactory test or screening device, must minimise the number of 'false alarms' and 'misses'. (The misses are also called *false positives*). Mainly, there are two ways of attaining this end—which boils down to shrinking the areas named F and M, in the envelope, containing the false alarms, and misses. One is to refine the aptitude test used for selection or screening, which amounts to increasing the validity of the test, by following psychometric principles: as the correlation between the aptitude test and the proficiency test increases, the envelope of the scatter plot becomes narrower and thinner, with concomitant reduction in the bulge in the middle. This is the scientifically approved method. The other method depends upon shifting the cut-off points, either singly or jointly, in order to shrink the areas under sections F or/and M.

Suppose, we decide to shift the cut-off point for the aptitude test to 78, from 95 which was the original qualifying score, as shown in Figure 2. This amounts to adoption

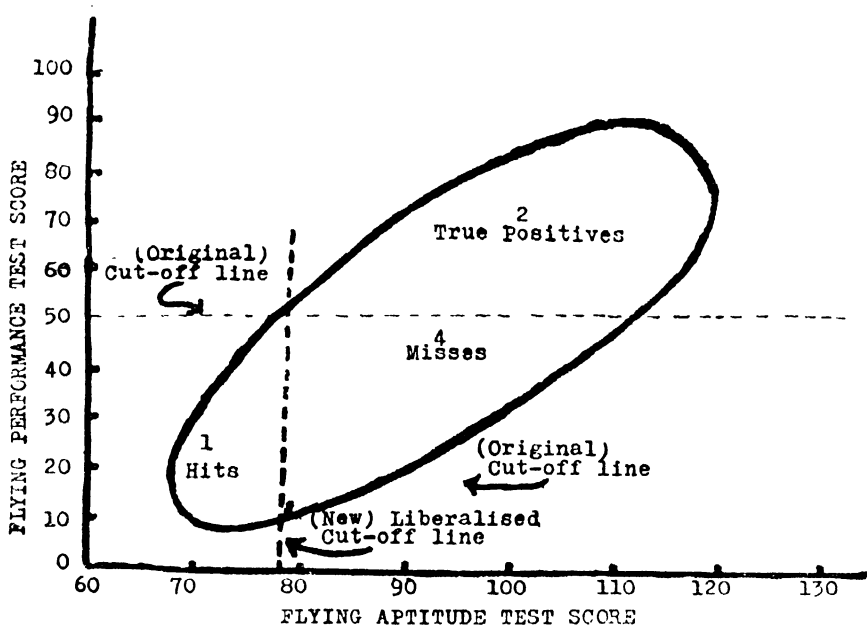


Figure 2. Effect of liberalising the cut-off point in the predictor test (Flying Aptitude Test) score on the relative areas of the four sections of the envelope.

of a more lenient or liberal enrolment policy. The number of false alarms is at once reduced, which means, no potentially deserving applicant for pilot training has been wrongly rejected from the training course. However, the number of misses or 'false positives' is increased proportionately; this means a large number of trainees will be allowed to enrol for costly training, but a substantial proportion of them will not be able to make good. All the investment in training of the false positives will be a waste. We should realise that with a liberalization of the enrolment policy—to permit preferential leniency for one particular community, a substantial portion of the social investment is likely to be wasted, *so long as the qualifying mark in the final proficiency test remains the same.*

The next alternative is to shift the cut-off score in the aptitude score to a still higher point, say, 115. Enrolment to the training course is made stiffer. The number of false positives is reduced drastically, but there is a concomitant increase in the number of false

alarms. That means that some potentially good pilots may be screened out, wrongly, due to excessive strictness of the screening test.

A third alternative is to shift the qualifying mark in the final proficiency to a lower score, say 30, as shown in Figure 3. A large number of false positives become true positives,

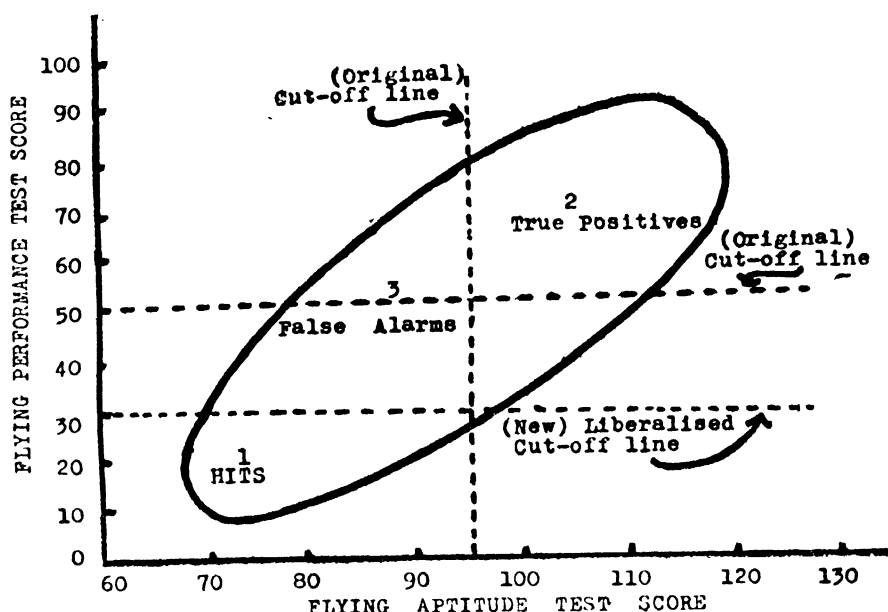


Figure 3. Effect of liberalising the cut-off point in the final qualifying Flying Performance Test score on the relative areas of the four sections of the envelope.

because they are declared as successful pilots now. A little consideration will show that this strategy of lowering the qualifying mark in the final proficiency test is of dubious value, and can have disastrous consequences in future practice. By lowering the level of proficiency deemed necessary for successful pilots, we are taking enormous risks. The pilot, though really deficient, has been declared successful: the quality of the service he can render remains poor; he is likely to make more mistakes than a really good pilot. And the results of any mistake by a pilot can be disastrous: an extremely expensive plane may be damaged or lost; what is more serious, lives may be lost, the price of which cannot be calculated. All because, we have unwisely declared an individual to have become a pilot, by lowering the qualifying mark for him *specially*, as he belongs to a particular community, while he should not have been declared so.

If the larger interest of the community or nation as the client party is to be safeguarded, then we have to ensure that mistakes, as far as is humanly possible, must not occur, during the actual performance of duty by the professional, the expert, the specialist, when he is giving his service to the client. This can be ensured only by enforcing the highest level of proficiency in the job—be it flying a plane, or carrying out a cardiac or cortical surgery, constructing a bridge, or presiding over a judicial bench.

A policy of selective liberalization of qualifying standards in a profession, by lowering the minimum qualifying mark in the final proficiency test, is far more counter-productive and risky, than a policy of selective liberalization of qualifying marks for selection or enrolment in sophisticated courses in science, technology and certain professions demanding high levels of skill and ability. As we have seen above, such a policy results in

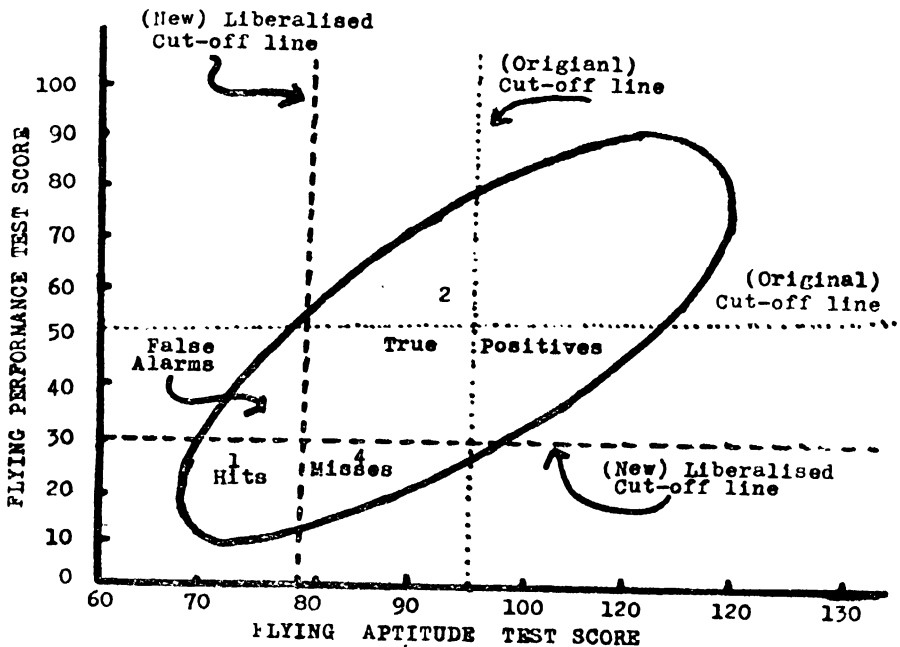


Figure 4. Effect of liberalising the cut-off point in the predictor test (Flying Aptitude Test) score as well as in the final qualifying Flying Performance Test score on the relative area of the four sections of the envelope.

an increase in the number of false positives. The enormous cost of training of a large number of persons, many of whom being really incapable of benefiting from such training, has to be borne by the society. Reservation of quotas and selective lowering of enrolment in institutes of higher learning is thus counter-productive. However, so long as the final qualifying standard is not tampered with, the situation is not too bad : those who fail to reach an acceptable level of proficiency are debarred from entering the profession for serving the community. Any liberalization of the qualifying mark for final entry into a profession removes the safeguard against the unwise policy of lowering standard for preferred communities to enrol for training.

This line of analysis shows the importance of finding cut-off points which are optimal, in the sense that the loss to the society for its failure to provide training to the false alarms—potentially good surgeons, physicians, pilots, engineers, lawyers, and scientists being denied the opportunity to prove their worth—has to be balanced against the cost to the society in making two types of mistakes : cost of training potential failures, and risk of declaring persons capable of assuming high responsibility when basically they are below mark.

This dilemma is very poignant in those spheres of professional and technical training, where the finished product, the expert, or the specialist, is vested with such responsibilities that the cost of even a small mistake is very high, and has to be met by the clientele served by him : the patients in the clinic, the passengers in a plane, persons seeking justice, and so on.

This type of analysis makes a convincing case for maintaining a stringent cut-off point for recruitment tests, and far more so, not lowering the standard of the minimum qualifying marks in final tests of proficiency for entering the professions. The future welfare of the community cannot be mortgaged to the supposed welfare and social justice to a

limited section of the community. Let it be pointed out that maintenance of strict cut-off points is equally harsh to all sections of the community. The policy of reserving seats for higher specialised training becomes discriminatory when lower standards are prescribed for enrolment for a particular set of applicants. The argument, which politicians are fond of trotting out that we are thereby trying to do justice to a disadvantaged section of the community, is specious, when we realise that not only injustice is being done to some meritorious candidates, but more seriously, we are exposing the entire society to the ministrations of the so called specialists and experts, who, in reality are second raters.

This line of analysis can be extended to the policies of fixing up quotas for promotion, for higher level specialist training, for the system of carrying over, and of conversion, and it can be shown that they are not defensible on decision theoretic grounds. The constitution makers had intuitively guessed the cogency of the line of thinking outlined above, when they laid down that "the claims of the scheduled castes and scheduled tribes be taken into consideration *consistently with maintenance of administration*" (Part XV, Article 335, italics added). The point is that all policies of liberalization at the time of admission to general courses, amounts to increasing opportunities to all, and no risk is involved. But reservation at higher levels, or at the time of promotion to higher echelons of jobs, or for undergoing specialist training involves heavy cost to the nation, which, in turn, demands certain minimum level of the quality of services from the professionals, specialists and experts. There cannot be any dilution of the qualifying standards for experts, and specialists, where they serve a clientele, and where the cost of any error is high and has to be borne by the clientele.

The risk from the policy of reserving seats at the MBBS level is relatively less than at the MS or MD level. The social injury of a mistake committed by the driver of a taxi cab is far less than that of the driver of a fully loaded transport bus. The cost of an error committed by the driver of a freight train is far lesser than a mistake committed by the driver of a super fast express train. The error committed by a general practitioner is likely to be less costly than that of cardiac surgeon or a gynecologist.

To complete this line of argument it should also be pointed out that admission of students to the MBBS class or engineering degree class, by paying huge capitation fees, if the level of the qualifying standard is lowered down also amounts to artificially and cynically increasing the number of false positives. Of course, we can argue that the social risks can be minimised to some extent by strictly adhering to stringent standards for passing in the final proficiency examinations. But this argument is weak, because it ignores the huge investments made for training of those who are essentially second raters, from whom the return to the community, in terms of the quality of service rendered to the clients, is bound to be low.

Ideally, no injustice should be done to the meritorious, irrespective of his class, caste or religion, neither at the time of enrolment, nor at the time of promotion. Any policy that does injustice to merit injures the society in the long run.

Only on grounds of political expediency can the advocacy of reservation for promotion or higher level training be defended. But no amount of logical argument will cut any ice with politicians, who, unfortunately in our country, are extremely short-sighted and selfish. However, political expediency is a global phenomenon, with no north-south dividing line. Our case is complicated by the fact of the presence of tremendous inconsistency among most political parties.

Refinement of Personnel Selection Decisions

Estimation of social costs and social benefits and returns entails a lot of value judgment and are generally notional in nature. Therefore one can anticipate an area of uncertainty, with arguments in favour or against setting up of cut-off points in the selection tests, and the related selection or recruitment policies. Those who favour shifting of the cut-off point

to a lower score, for preferred sections of the community, for purposes of selection to higher courses of learning, may put forward the following arguments :

- (1) A 'failure' may not be a total, irretrievable, social loss. The Harijan or the Adivasi candidate may stand to gain a good deal from the higher training, even if he fails to pass the final qualifying examination. If allowed to enrol he may become more worth to his community, and to the larger society, because of whatever he learns.
- (2) If a Harijan or Adivasi candidate is refused admission to a higher level course, we are shutting off all chances of enriching him, and through him, his community. After enrollment, perhaps his deficiencies could be identified, and remedial measures taken, so that he could make grade.
- (3) When the nation urgently needs more doctors, engineers, pilots, and management experts, will it not be advisable to go for a policy of 'processing even low-grade ore', to get a few more experts?
- (4) After all, all tests are fallible : no test is perfectly valid. An error made in wrongly rejecting a potentially good candidate, cannot be rectified.
- (5) The ex-Janata Minister, Rabi Ray (1981) argues that "I must make it absolutely clear that ideas and tests about merit and competitive selection are irrelevant in an unequal society."

Most of the arguments stated above are either logically weak and one-sided, or just specious, of which the last one by the ex-Minister is a typical example. Political leaders consider themselves competent to make value judgments and give final verdicts on subjects about which he may be unlettered and utterly ignorant. It will be a waste of effort to argue logically against such divine pontifications.

Certain counter arguments can be made for making the cut-off points of selection tests still more stringent. At least such a policy if strictly enforced will reduce the enormous cost of training the large number of undeserving false positives. This will prevent scarce educational resources being wasted upon undeserving candidates : the resources thus saved can be spent more effectively on the really deserving trainees. Again, from even a humanitarian point of view, the young candidate who is going to fail ultimately, in the final qualifying examination, is better off facing this reality early, rather than waste valuable years in search of a chimerical goal.

At this stage, it may be pointed out that the technology of personnel selection, placement and training is far more advance and sophisticated than the simplified account given above. Various refinements have been achieved in testing and measurement theory, which help in increasing the validity of the prediction from test performance *now*, to future performance on the job, *after* training is completed. The lines of improvement are briefly summarised below.

1. Instead of using only one aptitude test as a predictor for future job performance, a number of predictor tests are used. By using what is known as multiple regression techniques, a composite score is obtained which predicts future performance much better than a single predictor ever can. Again, there are statistical techniques like multiple discriminant analysis, which helps in proper placement of candidates into one or other trades or jobs, after the initial selection has been made. For example, young cadets can be divided into three groups, to be placed for the army, navy or air force wings. These statistical techniques are based upon an implicit 'compensatory' model of human abilities and performance. The basic idea is that relative deficiency in one area, i.e., in one skill, or ability, or factor, can be compensated by relative superiority in another skill, ability or factor, so that a satisfactory level of performance in most jobs is assured. The entire generalist orientation of the higher administrative services like the I.A.S. is based upon this compensatory model.

2. Some scholars hold that there are certain very high level jobs and professions where a satisfactory level of performance demands a non-compensatory model of func-

tioning. That is, a certain minimum level of functioning is called for each component of the total performance in the complex job at hand. Whereas the compensatory model uses what is called a 'linear composite' method of scoring for selection decisions, the non-compensatory model uses what is called the multiple cut-off method of scoring for making selection decisions. The two methods are illustrated in Figure 5.

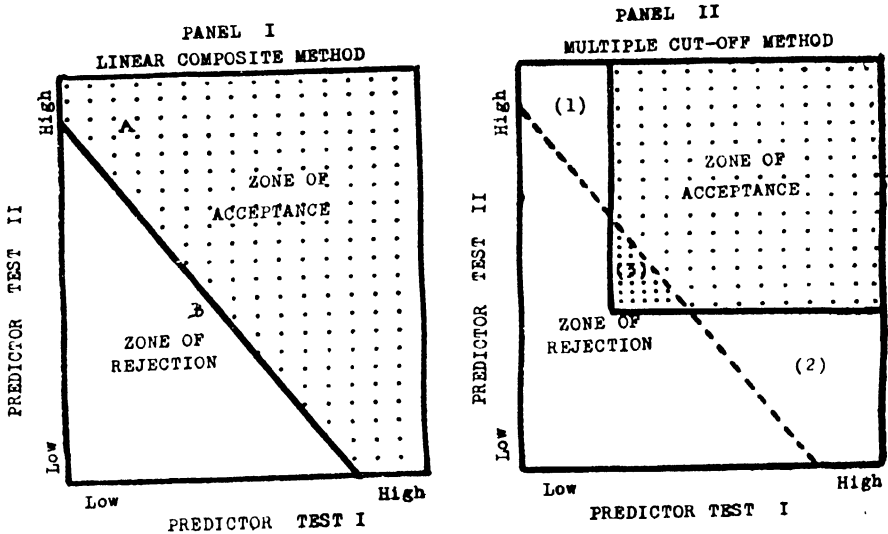


Figure 5. Selection by the Linear Composite Method based upon the Compensatory Model, and the Multiple Cut-off Method, based upon the Non-Compensatory Model, using two predictor tests, I and II.

In the Linear Composite method shown in Panel I of Figure 5, candidate A has got low score in Test I, but high score in Test II, and is selected, because he falls in the upper, acceptance zone which is shaded. Likewise, candidate C, getting high score in Test I, and low score in Test II, is selected. But candidate B, obtaining moderate scores in both tests I and II, is rejected.

In the multiple cut-off method, a minimum score in Test I and a minimum score in Test II will be required in order to qualify for acceptance. It means that candidates falling in region (1), with low scores in Test I, but high scores in Test II, and candidates in region (2), with high scores in Test I, but low scores in Test II, will be rejected if we follow the multiple cut-off method, though they would be accepted if we follow the linear composite method. There is a small region (3) which contains candidates which are accepted by the multiple cut-off method, but rejected by the linear composite method, and they can be accommodated by resorting to what is called the non-linear composite method, in which the boundary line for the acceptance region is curved inwards to exclude the region named (3) in the II Panel.

3. Developments in the field of differential aptitude testing, differential prediction and configural prediction, have improved the accuracy of the selection tests. Increasingly greater use is made of differential predictions in decisions for classifications, placement and further training in narrow specialist areas. The presence or absence of interactions between aptitude and treatment is taken care of by refining the method of differential prediction. The worth of all valid classification and selection tests depends upon the fact that the cost of training or employing or promoting the false negatives will always be only a fraction of the investment under the same heads for the entire group of hits and true

positives. When the situation is reversed, the selection test is worthless, and should be scrapped.

The social costs and benefits of different types of decisions following selection, recruitment, placement, and training, in the sphere of higher scientific, technical and professional education, can be analysed using a value-free objective framework, making use of the calculus made popular in test theory and decision theory. If policy makers in power decide, that certain things are good for the nation, relying upon value judgment or on grounds of political expediency (one example was given in the form of pronouncement of Mr. Rabi Ray, who seems to forget that he is now neither a Minister nor a seer), these types of arguments will cut no ice with them. In the field of reservation, which policies are made for gaining political mileage, and which are made with genuine social welfare in mind, is not easy to decide. When a politician like Rabi Ray advocates that what "we adopt a policy of special opportunities and reservation for the socially backward classes designed to raise their classes and bring about social equality", he appears to be quite innocent about their implications when implemented in the field of higher education.

Most writers on this issue have failed to recognise the fact that the policies of reservation have different impact, resulting in altogether different types of outcomes, as they are applied to different spheres. Provision of reserved constituencies, or reservations of a certain number of jobs, (where the number of applicants is much greater than the number of vacancies), do not have qualitatively the same type of impact when applied to reservation of seats in institutions of higher learning. Here much national resource is invested with a view to get some return of certain minimum standard from the personnel trained in such institutions. Shifting of standards of the service, in order to be kind and lenient to certain classes of trainees, damages the very purpose of running such institutions. It is an experiment no less disastrous than the 'backyard mini steel plants' that China tried decades back. Doing social justice to the down trodden, or reduction of social disparities have to seek other solutions than tampering with decisions about selection and placement of candidate in the sphere of higher technical and professional education.

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B.B. Chatterjee

STUDENT EVALUATION OF INSTRUCTORS AS A FUNCTION OF EXPECTED AND OBTAINED PERFORMANCE

Although student evaluations of their instructors are quite widespread (cf. Costin et al, 1973; Kohlan, 1973), there is still considerable debate over their reliability and validity (e.g., Cohen & Berger, 1970; Frey, 1973; Rodin & Rodin, 1972). The present study which examines the effects of actual and expected performance of student evaluations should be seen as an attempt to throw some light on the problem. It is based on the assumption that student evaluations are influenced by a number of factors besides the actual performance of the instructor, and that among such factors the following three are likely to be very

important; (i) how well the student thinks he is going to do in the course (expected performance), (ii) how well the student actually does on the course (obtained performance), and (iii) whether the student does better or worse than expected (the difference between obtained and expected performance).

No previous study has examined the effects of these three factors on student evaluations experimentally. Hence the need for a study such as the present one in which university students taking a fully fledged course, consisting of a series of lectures followed by a class examination, are *randomly* assigned to different conditions of expected and obtained performance. The main hypothesis to be tested in the present study is that doing better than expected on a course will lead students to rate their instructor positively, whereas doing worse will have the opposite effect.

Method

Subjects : The subjects in the study consisted of 64 first-year university students enrolled in a special orientation programme, designed to bridge the gap between school and university, especially in those areas where the average first-year is found to be deficient. The programme consisted of a series of lectures and practicals in three subject areas; mathematics, communication, and literature. The average age of the students was 18.6 years. All had high school graduation certificates that entitled them to enrol at the university, and had elected to take the Communications course, offered as part of the university-wide orientation programme, that preceded the commencement of the first-year lecture programme. The aim of the course was to improve the students' capacity to communicate accurately and fluently, both verbally and in writing. The lectures and practicals were all given by an experienced instructor from the Department of Communication.

Procedure : The subjects were randomly assigned to one of nine conditions in a 3x3 factorial design, comprised of three levels of the independent variable of expected grade (high, medium, low) and three of the independent variable of obtained grade (high, medium, low). The dependent variable was the subjects' ratings of the instructor's performance during the course.

At the first meeting (prior to the beginning of the course proper) the subjects were told by the instructor that the course they were about to attend was unlike any other they had taken at school and that success on the course was not closely related to how well (or poorly) they had done in the usual school subjects. However, they were told that it was important to get an indication of their present capacity to communicate fluently and accurately, because it had very strong effects on their ability to benefit from the course. Finally, the subjects were told that, as a direct result of these effects, their final grades on the course examination could be predicted very accurately from their performance on a specialized test of their communication skills. At this point, all the subjects were given a specialized test of their 'capacity to communicate accurately and fluently'. In the actual test, the subjects were given 15 minutes to read a 10-page article, and to prepare a short summary of its main points. The article was then removed while each subject individually gave a five-minute description of its main points into a tape-recorder. The point of the exercise was to lead subjects to believe that they were furnishing the lecturer with information that would indicate the likelihood of them doing well or poorly on the Communications Course.

After the subjects had completed the specialized test, the meeting was terminated, with the instructor telling the subjects to gather at the same place the next day when they would be given an indication of how they had done on the aptitude test and would attend their first lecture. The next day, prior to the lecture, each subject was told that because of their performance on the aptitude test he or she should perform 'better', 'same', or 'worse' than 'most of the class' on the lecture course; all the subjects in the 'better' group were told they were likely to get grade A, those in the 'same' group that they were likely to

get grade B, and those in the 'worse' group that they were likely to get grade C. This represented the manipulation of the independent variable of expected performance. In actual fact the A (better), B (same), and C (worse) grades were randomly assigned to the subjects by the instructor, irrespective of their performance on the aptitude test.

After the completion of the three-week course (consisting of 12 lectures and 6 practicals), the subjects completed a short examination or class test, made up of 40 multiple-choice questions covering each of the main sections of the course. After completing the test or examination, the subjects were told to gather the next day at the same place when the lecturer would inform them of their performance. When the subjects returned they were told individually they had done 'better' (grade A) 'same' (grade B) or worse' (grade C) than 'most of the class' on the class test or examination. This represented the manipulation of the independent variable of obtained performance. In actual fact, the three grades, A, B and C were randomly assigned to the subjects by the instructor, independent of how well or poorly they had done on the examination.

Immediately after getting their grades, the subjects independently evaluated the lecturer or instructor of the course, using a 21-item version of the Teaching Rating Form (TRF) developed by Pambookian (1974) from the original form of McKeachie et al (1971). This version consists of a series of three-item subscales chosen because of their high loadings on the following seven teaching dimensions; skill, achievement, interaction, overload, structure, rapport, and feedback. For each item subjects indicated on a five-point scale the degree to which the item statement is descriptive of the particular lecturer, from 'very descriptive' (5) to 'not at all descriptive' (1). Because the different scales correlated significantly with each other ($p < .01$) and the focus of attention was on the *overall* performance of the instructor, the subjects responses to the various items were summed to yield a single score indicating their overall lecturer evaluation. In addition, subjects rated the lecturer on a single item of general teaching ability, also on a five-point scale ranging from 'excellent teacher' (5) to 'poor teacher' (1). Finally, before leaving they were asked to indicate on a single five-point item how well they thought they had done on the test or examination, using the following scale; 3 = better than most of the class, 2 = same as most of the class, and 1 = worse than most of the class. This served as a check on the effectiveness of the manipulation of obtained performance. After completing these rating forms, the subjects were debriefed. As this debriefing the researcher supplied the subjects with their actual examination marks and apologized for having given some them incorrect information. None of the students indicated then, or later, that they were personally upset in any way by the deception.

Results and Discussion

The data was analysed in three ways. First, to examine the effects of expected and obtained performance on instructor evaluations, a 3×3 analysis of variance was performed on the data, with the independent variables being expected performance or grade (A, B, C) and obtained performance or grade (A, B, C) and the dependent variables the subjects' responses to (a) the 21-item TRF scale, and (b) the 5-point single item of teaching ability.

Second, a one-way analysis of variance was performed on (a) the subjects total scores on the TRF, and (b) the subjects response to the single teaching ability item, following the procedure recommended by Aronson & Linder (1965), to establish the extent to which feelings of 'gain' (positive disconfirmation) and 'loss' (negative disconfirmation) influenced the subjects evaluation of the lecturer. In this analysis, the nine cells in the 3×3 analysis of variance were collapsed to form three kinds of outcome groups, which formed the independent variable; namely (a) positively disconfirmed (gain) group, (b) confirmed (unchanged) group, and (c) negatively disconfirmed (loss) group; specifically, the 'gain' group consisted of subjects who expected a B grade but received an A grade, and those who expected a C grade but received A or B grades; the 'unchanged' group, of subjects who expected A, B or C grades and received the same grades; and the 'loss group' of subjects

who expected a B grade but received a C grade and those who expected an A grade but received B or C grades.

Third, rank-order correlations were computed between grades on the course examination and the independent variables of expected and obtained performance. To perform this analysis the following ranks were assigned to expected and obtained performance A=1, B=2, C=3. In addition, a one-way analysis of variance was performed on the mean examination grade of students in the 'gain' (positively disconfirmed), 'unchanged' (confirmed) and 'loss' (negatively disconfirmed) groups. Finally, product-moment correlations were computed between examination grades and student ratings of how well they thought they had done on the examination (1=worse, 2=same, 3=better than most of the class).

The results indicated clearly that the grade expectations were effectively manipulated. For instance, the analysis of variance on the manipulation check item yielded only a significant main effect for expected grade, $F(2,61)=8.81$, $p=.001$; with the mean expectation scores being in the predicted order, namely high expectation ($M=89.61$), medium expectation ($M=71.38$) and low expectation ($M=40.97$). A Scheffe test of multiple comparisons indicated that the differences between these means were each significant at the .01 level.

The results from the two-way analysis of variance showed that lecturer evaluation, as assessed by both the TRF and the teaching ability item, were strongly affected by the variable of obtained grade. For instance, there was a significant main effect for obtained grade on TRF total scores, $F(2,61)=5.98$, $p<.05$, and on teaching ability item scores, $F(2,61)=3.01$, $p<.05$. In both cases, the higher the obtained grade, the more favourable the evaluation received by the lecturer. Among the subjects who obtained a high grade, the mean TRF score was $M=79.21$ ($SD=9.98$); among those who obtained a medium grade, it was $M=74.23$ ($SD=10.01$); and among those who obtained a low grade it was $M=64.20$ ($SD=8.85$). The corresponding teaching ability mean item scores were: high, $M=3.43$ ($SD=1.03$); medium, $M=2.69$ ($SD=1.11$); and low $M=2.01$ ($SD=1.08$). A Scheffe test of multiple comparisons indicated that each of the difference between these mean score was significant at the .05 level for both dependent variables.

The two-way analysis of variance also revealed that lecturer evaluation, as assessed by both the TRF and the teaching ability item, was very strongly affected by the expected grade variable. For instance, both the main effects of expected grade on TRF total scores, $F(2,61)=7.80$, $p<.001$, and on teaching ability item scores, $F(2,61)=3.26$, $p<.01$, were highly significant. In both cases, the higher the expected grade, the less favourable the lecturer's evaluation, as predicted. Specifically, among the subjects who expected a low grade, the mean TRF score was $M=80.01$ ($SD=9.91$); among those who expected a medium grade, it was $M=69.97$ ($SD=10.01$); and among those who expected a high grade it was $M=64.35$ ($SD=9.85$). The corresponding teaching ability mean item scores were: low, $M=3.55$ ($SD=1.01$), medium, $M=2.14$ ($SD=1.10$) and high, $M=1.19$ ($SD=1.04$). A Scheffe test of multiple comparisons indicated that each of the differences between these mean scores was significant at the .01 level, for both dependent variables.

The results of the one-way analysis of variance designed to test the hypothesized effects of 'gain' and 'loss' on lecturer evaluations revealed significant effects on both the TRF total scores, $F(2,61)=5.21$, $p<.01$, and on the teaching ability item, $F(2,61)=3.26$, $p<.05$. On the TRF scale the mean scores of the three groups were: positively disconfirmed (gain) group, $M=82.65$; confirmed (unchanged) group, $M=70.01$ ($SD=10.11$); and negatively disconfirmed (loss) group, $M=59.96$ ($SD=9.75$). A Scheffe multiple comparison test revealed that the differences between those three mean scores were each significant at the .01 level in the predicted direction. On the teaching ability item, the mean scores of the three groups were positively disconfirmed (gain) group, $M=2.86$ ($SD=1.01$); confirmed (no change) group, $M=2.09$ ($SD=1.07$); and negatively disconfirmed (loss) group, $M=1.42$ ($SD=1.08$). A Scheffe multiple comparison test revealed that these three mean scores differed significantly from each other at the .05 level, also in the predicted directions.

Finally, examination grades were not significantly ($p<.05$) correlated with either expected performance ($\rho=.09$) or with obtained performance ($\rho=.13$). The one-way

analysis of variance also did not reveal a significant effect for 'gain' or 'loss' on examination grades ($F = 1.31$, $df = 2, 61$, $p < .05$). Although there was a positive correlation between examination grades and student ratings of how they thought they had done, it was not significant ($r = .21$, $p < .05$).

The results indicate that whereas obtained performance had a significantly positive impact on student evaluations, expected performance had the opposite effect, with students led to believe they would perform relatively well rating the instructor *less* favourably than those who believed they would perform relatively poorly. In addition, they reveal clearly that student evaluations were affected by whether the students performed better than expected (gain) or worse than expected (loss). Specifically, students whose expectations were positively disconfirmed (gain) rated the instructor much more favourably than those whose expectations were confirmed (no change). In turn, students whose expectations were confirmed (no change) rated the lecturer much more favourably than those whose expectations were negatively disconfirmed (loss). Finally, because expected and obtained performance were varied without regard to capacity or examination grades, it is not surprising that the grades the students actually obtained in the course examinations were unrelated to both expected and obtained performance.

The fact that expected and obtained performance *caused* students to evaluate their instructor in this way, suggests that such evaluations should only be used to compare instructors, if students taking their courses do not differ very widely in (a) the average grades they obtain, and (b) their expectations of their likely average grades. However, before too firm an interpretation is placed on the findings of this field experiment, two cautionary remarks are required. First, the course taken by the subjects was not a normal or usual university course. For one thing, it was taken as part of a university-wide orientation program, and was not an integral part of the students' degree programs. For another, the course was much shorter than most university courses and did not have to be passed for the students to graduate, unlike most university courses. Second, to conform to the dictates of experimental design, it was necessary to introduce a number of elements that may have been perceived as 'unnatural' by the subjects. Specifically, telling the subjects that they were likely to perform better, same, or worse than the rest of the class is not the same as learning from their own experience that it is reasonable to perform at a certain level. In addition, it is not common for students to be asked to evaluate their instructors, immediately after being told how well they have done in the examinations. As surveys (e.g., Hildebrand et al, 1971; McKeachie, 1969) have shown, it is usual for such evaluations to be collected first prior to the final examinations for the course. Finally, whereas most scales employed in student evaluations have focussed on different aspects of the course, the present study deliberately employed an instrument that concentrated just on the instructor himself.

In view of those limitations, generalizations from the present findings should be made very cautiously. More research is needed before the conclusions of the present study can be used as a basis for taking important decisions regarding the way in which student evaluations are to be collected and their results used.

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Christopher Orpen

PARTICIPATION, FACULTY SATISFACTION AND PERCEIVED INSTITUTIONAL CLIMATE

A major outcome of review of researches on participation in industrial setting is that employee participation in democratic atmosphere created by permissive leadership facilitates the development of internalised motivation and serves to raise levels of employee production and morale. These researches have shown that (1) considerably high proportion of the members headed by a permissive leader considered themselves to be satisfied with their jobs, (2) larger proportion of members rated the productivity of their division either very high or high, (3) considered the morale of their work group very high. Similar conclusions of positive relationships between teacher perceived participation in educational business management and staff personal decisions have been reported from some of the studies of teacher participation in educational establishments, indicating some similarity of work situation in the two types of organizations, industries and educational institutions.

Following the findings of these researches in the western countries a set of hypotheses has been formulated and the objectives of the present study is to test these hypotheses and to see whether or not the findings of the studies in the western countries hold true in educational institutions in Indian setting, where lately education has begun to be viewed as an industry in the sense that there is increasingly an expectation of growth and return from education. In this paper attempt is made to test these hypotheses and to see if these can be retained in the two groups of professional colleges in India, nursing and teacher training.

Hypotheses : It was hypothesized that

- (1) Faculty members in nursing institutions will have participatory role to play in larger number of areas of administration and at higher levels than those in teacher training institutions. They will also perceive their institution's climate more favourably and will be more satisfied in their institution than the teachers in training colleges. In other words, the Participation, Satisfaction and Climate scores of nursing faculty will be significantly larger than those of the faculty members of the teachers' colleges,
- (2) Participation scores will be positively correlated with satisfaction scores and that the teachers in institutions with high participation scores will be more satisfied with their institution than those in institutions with low participation scores,
- (3) Participation scores will be positively correlated with perceived climate scores and that teachers in institutions with high participation scores will perceive their institution's climate more favourably than those in institutions with low participation scores. In other words, the perceived climate scores in institutions with high participation scores will be significantly higher than those in institutions with low participation scores,
- (4) There will be positive relationship between perceived institutional climate and satisfaction of teachers.

Instruments and Procedure

To test the above hypotheses, three sets of data on teachers' participation, their satisfaction with their institution and their perception of the climate of their institution

were collected. Data on the extent of participation available to teachers were collected with the help of a participation scale. The participation scale used in this study was the modified version of Srivastava (1975) Student Participation Scale, and Srivastava (1978) Participation Scale. The modified version of the Scale developed after item analysis and a validation study consisted of 26 items spread over three dimensions of the Scale, Participation Process Continuum Dimension, Structure for Participation Dimension, and Participation 'Feel' or Climate Dimension. The Participation Scale was used to assess the overall state of faculty participation, and to identify and classify the two groups of professional colleges, nursing and teacher training together as well as separately as 'high faculty participating' and 'low faculty participating'. Data on teachers' satisfaction and their perception of the institutional climate were obtained by the use of TAPE FORM B (Transactional Analysis of Personality and Environment) developed by Lawrence A. Pervin and adapted to Indian conditions by Sushil K. Jindal.

For testing the hypotheses the research design suggested that the institutions with high and low teacher participation scores be first identified. This could be done by using either the Median of the score distribution for teacher participation or by using the 27% top and 27% bottom scores. Both the Median and the 27% (actually about 30%) top-bottom scores criteria were used for classifying the institutions in the two categories—high participating and low participating, for testing and retesting the hypotheses. But before the two criteria were used the institution's teacher participation scores were determined by pooling and averaging out the scores given by the respondents, principal/director and teachers in the institution. As the study was concerned with a total of only 32 institutions (14 nursing and 18 teacher training) both the criteria i.e. Median and 27% top-bottom scores were used for classifying only the total group of these 32 institutions in the two categories; the groups of nursing and teachers' colleges have been classified in the two categories, high participating and low participating by using only the Median criterion as the use of the 27% top-bottom criterion for each of the two groups of professional colleges respectively would have so much reduced the number of observations in the two categories of institutions that any valid conclusion could hardly be drawn.

For testing the hypotheses two types of statistical treatments were given to the data (1) computation of correlation between (a) participation and satisfaction scores of teachers, (b) teachers' participation scores and perceived climate scores, and (c) satisfaction scores of teachers and perceived climate scores. For computation of correlations the institution's satisfaction scores of teachers and perceived climate scores respectively were also determined by averaging out the scores given by the teacher respondents in the institution and then product moment correlation was worked out between each of the 14 nursing, 18 teacher training and 32 combined group of nursing and teacher training institutions' participation and satisfaction scores, participation and climate scores, and satisfaction and climate scores, (2) calculation of CRM for determination of significance of difference in satisfaction of teachers and their perceived institutional climate between institutions with high and low teacher participation scores.

Sample

It consisted of 50% random sample of teachers of 14 nursing and 18 teacher training institutions that are affiliated to 13 universities in India. The findings of the study reported in this paper are based on the responses of 32 principals/directors (14 nursing and 18 teacher training) and 64 faculty members (28 nursing and 36 teacher training) to the participation Scale, and 203 (94 nursing and 109 teacher training) faculty members drawn from the 14 nursing and 18 teacher training institutions of the 13 universities in India, who filled in the TAPE FORM B which included the Satisfaction items.

Testing the Hypotheses

Hypothesis 1 :—"The extent of participation available to teachers, their satisfaction with their institution, and their score on TAPE (Institutional Climate) in nursing institutions

will be significantly larger than those in teachers' colleges." While the basis for setting up the three hypotheses 2, 3 and 4 has been a number of studies in industrial and educational settings, there has been no such basis for formulating the hypothesis 1. This hypothesis was set up to test the observation of some people connected with both nursing and teacher training institutions that the nursing faculty is more committed to their profession and devoted to their institution than are those in the teachers' colleges and the surmise that the nursing faculty's share in administration might be a factor for their more commitment and devotion to the institution, in other words, their satisfaction with their institution and perception of better climate. The data however, do not wholly substantiate the observation of these people. From Table 1 it is observed that the nursing faculty do not significantly differ from their counterparts in the teachers' colleges in respect of the satisfaction they get from their institution and the type of climate they perceive in their institution, even though they differ significantly from one another on the extent participation is made available to them in their institution. The Mean of nursing faculty participation score is significantly higher than that of faculty members of teachers' colleges. The 't' value of 2.28 is significant at .05 level but the 't' value of .81 and .10 between Satisfaction and Climate scores respectively in nursing and teacher training institutions are not significant, which suggest that the hypothesis of differential standing of the nursing and teacher training faculty on the three variables, Participation, Satisfaction and Perception of their Institutional Climate, can only be partially retained. Table 1 also indicates that nursing and teacher training faculty do not differ from one another on their perception of the four constituents of the college environment—College, Faculty, Students, and Administration, and if they differ from one another in respect of the extent of participation available to them, it is because of the availability of 'Structure for Participation' and 'Feel of Participation' in nursing institutions more frequently than in teacher training institutions. The Mean faculty participation score in nursing institutions on 'Participation Structure' dimension and 'Participation' 'Feel' or 'Climate' dimension are significantly higher than those in teacher training institutions and though it is apparently higher also on 'Participation Process' dimension but the difference in their Means in the two groups of professional colleges is statistically not significant.

Table 1

MEAN, STANDARD DEVIATION AND 'T' VALUES OF TEN VARIABLES IN NURSING AND TEACHER TRAINING INSTITUTIONS

<i>Variables</i>	<i>Nursing</i>		<i>Teacher Training</i>		<i>'t'</i>
	<i>Mean</i>	<i>S.D.</i>	<i>Mean</i>	<i>S.D.</i>	
Process	139.53	17.143	122.92	34.569	1.64
Structure	58.856	7.359	48.185	10.084	3.32
Feel	35.571	3.844	30.231	5.928	2.92
Participation	233.96	24.737	201.33	48.675	2.28
Satisfaction	144.99	19.773	150.47	18.011	.81
College	181.93	25.226	182.63	19.956	.87 E 01
Faculty	187.89	26.252	186.58	26.916	.13
Students	179.28	26.632	177.68	18.983	.22
Administration	177.06	29.682	176.28	26.675	.78 E-10
TAPE	726.16	82.884	723.17	74.785	.10

Hypothesis : "Participation scores will be positively correlated with Satisfaction scores and that the teachers in institutions with high Participation scores will be more satisfied with their institution than those in institutions with low Participation scores." Like the findings of the researches on workers' participation and their satisfaction in industrial settings as well as on perceived teacher participation and their job satisfaction in some of the educational institutions in the western countries, the teachers' satisfaction in educational institutions has a significant bearing on the extent of participation available to the faculty members in the professional colleges, nursing and teacher training in India. The data uphold the hypothesis of positive relationship between participation and teachers' satisfaction for both the category of faculty members, nursing and teacher training separately as well as when taken together. The correlations between teacher Participation scores and their Satisfaction scores in each case, nursing, teacher training, and nursing and teacher training combined (.651, .780 and .585) respectively are significant at .01 level in each case except nursing where it is significant at .05 level. These significant correlations, on the one hand, suggest that increase in the availability of participatory role to teachers will necessarily increase their level of satisfaction with the institution, and on the other, are pointers at the desire and urge in teachers for recognition and status in the hierarchy of the functionaries of the institution. The relationship between recognition/status and participation is in proportion to the extent to which teachers participate in the total school process and activity including the administration of the institution, and teachers' involvement in the administration of their institution has something to do with their satisfaction, though it may not be the sole contributory factor in their satisfaction.

Although the Participation scores obtained from the use of the Participation Scale as a whole indicate significant positive relationship in each case, nursing, teacher training, and nursing and teacher training combined, the three components of the Participation Scale separately do not uniformly indicate this relationship. From the correlation matrices in Table 2, 3 and 4 it is observed that the correlations only between Participation scores on the Participation Process Continuum dimension and teachers' satisfaction in each case, nursing, teacher training and combined group of nursing and teacher training (.694 df 12, .758 df 16, .618 df 30) are significant. In other dimensions i.e. Structure for Participation and Feel of Participation, the correlation with teachers' satisfaction though in some cases are significant, in others though positive, are not significant. From this it is possible to conclude that among the three dimensions of the Participation Scale, only the Participation Process dimension has a definite bearing on the teachers' satisfaction, and the relationship of teachers' satisfaction with Participation score in the other two dimensions is not so definite. These conclusions however, do not affect the retaining of the hypothesis of positive relationship of participation and teachers' satisfaction. They only suggest that the data on the Participation Process Continuum dimension should have been enough to study the relationship between participation and teachers' satisfaction.

The hypothesis of positive relationship between availability of participation and teachers' satisfaction with their institution is further reaffirmed when the data in Table 5 are examined with a view to test the hypothesis that teachers in institutions with high participation scores will be more satisfied than those in institutions with low Participation scores. The data suggest that the hypothesis be retained. Table 5 shows that there is significant difference between the Mean Satisfaction scores of the combined group of nursing and teacher training faculty in institutions with high and low 'teacher participation' scores, in each case whether the institutions are classified as high/low in terms of participation either by using Median or 27% top-bottom scores criterion. The 't' values of 3.23 and 2.79 between high and low 'teacher participation' institutions, when institutions are classified using Median and 27% top-bottom criterion respectively, are both significant. These findings suggest that the professional colleges (nursing and teacher training combined) as they are in Indian setting are though very much similar to industries and educational institutions in the western countries in their functioning and in the expectation of their share in administration, but they are different from the non-professional institutions of higher education in India, either in the manner of their administrative functioning and

Table 2

CORRELATION MATRIX FOR THE TEN VARIABLE IN 14 NURSING COLLEGES

	1 P	2 S	3 F	4 Pa	5 Sa	6 C	7 Fa	8 St	9 A	10 Cl
1P	x	.640	.309	.931	.694	.281	.667	.653	.096	.602
2S	.640	x	.824	.869	.486	.442	.463	.488	.378	.544
3F	.309	.824	x	.615	.160	.315	.195	.145	.293	.301
4Pa	.931	.869	.615	x	.651	.375	.630	.620	.224	.556
5Sa	.694	.486	.160	.651	x	.046	.482	.515	.018	.294
6C	.281	.442	.315	.375	.046	x	.369	.503	.940	.889
7Fa	.667	.463	.195	.630	.482	.369	x	.927	.196	.741
8St	.653	.488	.145	.620	.515	.503	.927	x	.301	.816
9A	.096	.378	.293	.224	-.018	.940	.196	.301	x	.785
10Cl	.602	.544	.301	.556	.294	.889	.741	.816	.785	x

Table 3

CORRELATION MATRIX FOR THE TEN VARIABLES IN 18 TEACHERS' COLLEGES

	1 P	2 S	3 F	4 Pa	5 Sa	6 C	7 Fa	8 St	9 A	10 Cl
1P	x	.887	.800	.991	.758	.262	.448	.290	.453	.466
2S	.887	x	.757	.929	.788	.289	.380	.233	.467	.440
3F	.800	.757	x	.847	.641	.395	.438	.380	.408	.505
4Pa	.991	.929	.847	x	.780	.244	.450	.300	.468	.484
5Sa	.758	.788	.641	.780	x	.270	.411	.258	.441	.443
6C	.262	.289	.395	.294	.270	x	.598	.545	.793	.903
7Fa	.448	.380	.438	.450	.411	.598	x	.224	.465	.742
8St	.290	.233	.380	.300	.258	.545	.224	x	.589	.690
9A	.453	.467	.408	.468	.441	.793	.465	.589	x	.885
10Cl	.466	.440	.505	.484	.443	.903	.742	.690	.885	x

the share their faculty have in administration or that the object of their satisfaction in the institution is not so much their involvement and share in administration as something else. Srivastava (1979) reported the 't' of 1.53 and 1.60 between Satisfaction scores of teachers in high and low 'teacher' participation institutions when institutions were classified as high/low in terms of participation using Median and 27% top-bottom criterion respectively, and both these 't' values are not significant. There is no doubt that the involvement of teachers in college administration gives them recognition, and to some extent raises their status and helps to solve many educational and administrative problems (Srivastava, 1977) and for this reason there is scope for faculty unionization and bargaining in the administrative control of educational institutions, and whereas it could be a major factor in the professional college faculty's satisfaction, but it was certainly not a major factor in the

Table 4

CORRELATION MATRIX FOR THE 10 VARIABLES IN THE COMBINED GROUP OF 32 NURSING AND TEACHER TRAINING COLLEGES

	1	2	3	4	5	6	7	8	9	10
	<i>P</i>	<i>S</i>	<i>F</i>	<i>Pa</i>	<i>Sa</i>	<i>C</i>	<i>Fa</i>	<i>St</i>	<i>A</i>	<i>Cl</i>
1P	x	.822	.723	.978	.618	.230	.473	.368	.314	.433
2S	.822	x	.826	.914	.490	.286	.362	.309	.372	.415
3F	.723	.826	x	.827	.334	.300	.323	.270	.321	.380
4Pa	.978	.914	.827	x	.585	.266	.454	.360	.347	.447
5Sa	.618	.490	.334	.585	x	.154	.434	.375	.213	.364
6C	.230	.286	.300	.266	.154	x	.482	.521	.868	.894
7Fa	.473	.362	.323	.454	.434	.482	x	.549	.341	.740
8St	.368	.300	.270	.360	.375	.521	.549	x	.446	.752
9A	.314	.372	.321	.347	.213	.868	.341	.446	x	.836
10Cl	.433	.415	.380	.447	.364	.894	.740	.752	.836	x

satisfaction of faculty of non-professional colleges where the motivation for the demand for their involvement in administrative functioning of the college may also lie in interests other than their satisfaction.

This inference about the hypothesis drawn from the data for the combined group of nursing and teacher training institutions holds as good for two of the three dimensions of the Participation Scale (Process dimension and Structure for Participation dimension) as for the Scale as a whole. The 't' values of 5.05 and 2.55 between the Satisfaction scores on the same two dimensions respectively when institutions are classified as high low 'teacher participation' using the 27% top-bottom scores criterion, are significant. The hypothesis however, does not seem to hold good for institutions classified as high low 'teacher participation' on the basis of Participation score on the Participation 'I feel' dimension, in each case whether the institutions are classified high low using Median or 27% top-bottom scores criterion. The 't' values of 1.21 and 1.41 are both not significant.

The analysis of data according to the two groups of professional colleges—nursing and teacher training, suggests differential effects of the variable of participation on teachers' satisfaction in the two types of professional colleges. While in teacher training institutions the data suggest that the hypothesis of significant difference between Mean Satisfaction scores in high and low 'teacher participation' institutions, whether they are classified on the basis of scores on the whole Participation Scale or on each of the three dimensions of the Scale, be accepted, the data for nursing institutions indicate that the hypothesis be completely rejected.

Table 5 shows that whereas all the 't' values 4.58 2.80, 2.48 and 3.85 between the Means of Satisfaction scores in teachers' colleges when they are classified as high/low on the basis of scores on the 'Process dimension', 'Structure for Participation dimension', 'Participation I feel dimension' and the Scale as a whole, are all respectively significant at .05 level, but none of the corresponding 't' values in the nursing institutions is significant. The differential effect of participation in the two groups of institutions suggests that unlike in the teachers' colleges, the urge for participation and the availability of participation to teachers are not necessarily tied up with the satisfaction of nursing faculty. But the fact that the Mean Satisfaction score of the nursing faculty is higher though not significantly in institutions classified as high 'teacher participation' than in that classified as low 'teacher participation', participation may have something to do with their satisfaction or dissatisfaction although the major source of their satisfaction in the institution may be as Avikan

(1971) and Morris (1973) also found, their feeling of achievement, recognition and work itself. And, in the case of the nursing faculty it is very likely that they seek satisfaction in the work itself, in doing it successfully and with a sense of achievement.

A member of the nursing faculty is basically a nurse. He or she has been trained as a nurse and is a member of the Trained Nurses Association of India. During his/her training and even as a faculty member he/she has to work in the hospital with patients sometimes directly and generally in association with students as their supervisor on the actual hospital job situation, and in doing so has learnt to recognize his/her crucial role not only in instilling the right kind of values and responsible attitude, but also in often successfully dealing with critical situations of the struggle between life and death. These feelings of achievement and of doing something worthwhile not for oneself but for others, may be stronger motivation for satisfaction in their work situation than the involvement in the work of the administration of their institution which may not have so direct an effect as the work itself in realizing one's worth.

Compared to the work situation the nursing faculty has been accustomed to and has the experience of meeting the challenges, the teacher's faculty works altogether in a different environment, and their role also not being so crucial as that of the nurses, there is no wonder that instead of seeking satisfaction wholly in their devotion to work, they seek it in their recognition and status in the administrative hierarchy. And, one of the ways to acquire a status is to participate in the running of the administration of the institution. If this analysis of the differential effect of teacher participation on their satisfaction in the nursing and teacher training institutions is taken as correct, then it is possible to conclude that though satisfaction by and large is related to the extent of participatory role teachers play in their institution, but the work situation itself is also a major determinant of teacher satisfaction.

Hypothesis 3 : - "Participation scores will be positively correlated with perceived Climate scores and that teachers in institutions with high Participation scores will perceive their institution's Climate more favourably than those in institutions with low Participation scores. In other words, the Perceived Climate scores in Institutions with high Participation scores will be significantly higher than in Institutions with low Participation scores." The climate of a social organization is a function of the dynamic interplay and interactions among the members of the organization and participation is a process of bringing about this interaction so that a group of people are brought together in working relationships in democratic setting. Since, one of the approaches to the domain of the climate of a social organization has been to encapsulate everything important to be said about the climate within the single global concept of morale, which according to Blankenship (1939) refers to a feeling of 'togetherness' and a sense of identification with and interest in the elements of one's job, working conditions, fellow workers, supervisors, employers and the company, and as participation also tends to bring about this feeling of 'togetherness' among people in an organization, there can be a close relationship between participation available to members in an organization and their perception of the climate of the organization. Whether or not there is such a relationship in the Indian professional college setting is being tested through the hypothesis of positive relationship between teacher participation and perceived institutional climate. There is need to test the above hypothesis as there are no direct studies to show the relationship between participation and climate, although there are studies (Wolf, 1971, Snyder, 1971, Beamer, 1969) which have shown positive relationship between teacher participation and teacher morale.

That the hypothesis of positive relationship between teacher participation and perceived institutional climate should be accepted is obvious from the correlation matrices (Tables 2, 3 and 4). The correlations of .556 df 12, .484 df 16, and .447 df 30 between teacher participation scores and the perceived climate scores obtained by the use of TAPE in the nursing, teacher training and combined group of nursing and teacher training institutions respectively are significant at .05 level and suggest that greater the availability of participation to teachers in the professional colleges, better and more favourable is the teachers' perception of the climate of their institution. These findings are in accord with the findings

Table 5

MEAN, STANDARD DEVIATION AND 'T' VALUES OF SATISFACTION SCORES OF TEACHERS IN INSTITUTIONS WITH HIGH AND LOW TEACHER PARTICIPATION SCORES USING MEDIAN AND 27% TOP-BOTTOM SCORES FOR CLASSIFICATION OF INSTITUTION IN THE TWO CATEGORIES

Institutions	High Participation Satisfaction Scores				Low Participation Satisfaction Scores			
	Median Criterion				Median Criterion			
	P	S	F	Pa	P	S	F	Pa
<i>Nursing</i>								
Mean	154.94	147.74	141.33	125.07	135.04	142.24	148.66	137.91
S.D.	16.246	13.503	11.404	17.481	17.89	24.177	25.001	13.393
't'	2.17	.52	.70	1.43	2.17	.52	1.70	1.43
<i>Teacher Training</i>								
Mean	163.69	161.58	160.67	162.58	137.24	141.57	142.30	138.35
S.D.	9.394	13.522	12.020	10.225	14.521	16.117	17.845	15.831
't'	4.58	2.80	2.48	3.85	4.58	2.80	2.48	3.85
<i>Combined</i>								
Mean	157.51	155.34	152.07	157.51	138.64	140.81	144.03	138.64
S.D.	14.594	15.573	15.102	14.594	18.189	19.332	21.49	18.189
't'	3.23	2.34	1.21	3.23	3.23	2.34	1.21	3.23
	27% Top-Bottom Criterion				27% Top-Bottom Criterion			
<i>Combined</i>								
Mean	164.56	154.78	150.65	157.05	131.88	134.26	138.23	133.67
S.D.	9.134	15.919	15.474	17.232	18.270	19.829	23.099	20.050
't'	5.05	2.55	1.41	2.79	5.05	2.55	1.41	2.79

Symbols : P -Process Dimension, S -Structure for Participation Dimension,
F— Participation Feel Dimension, Pa—Participation Scale as a Whole

of studies on morale in business enterprises (Katz, 1949, Bavelas, 1942, Levine and Butler, 1952, Roethlisberger, Dickinson and others, 1939, 1950, Maccoby, 1949 and Lewin 1949) and in educational institutions (Wolf, 1971, Snyder, 1971, Beamer, 1969).

Further analysis of the correlations matrices in relation to the three dimensions of the participation measuring instrument in the three groups separately however, do not suggest that the hypothesis of positive relationship between teacher participation and their perception of institutional climate can hold true in all cases when teacher participation score is not an aggregate of the scores on the three dimensions of the participation measuring instrument, but are the scores on the three dimensions considered separately. But the fact that teacher participation scores on each of the three dimensions yield significant positive correlation with the teachers' perceived climate scores in the combined group of nursing and teacher training institutions and in nursing and teacher training institutions separately

on some dimensions significant and on some not significant, but positive correlations suggest the possibility that the number of observations has to do something with the value of correlation and if the number of observations were larger in the other two cases also, the correlations in these cases also should have been significant, specially when each of the three dimensions of the Participation Scale is highly correlated with the scale as a whole, and then the hypothesis of positive relationship between participation and perceived climate in these cases also could be retained.

Like the three dimensions of the Participation Scale, the four components of the TAPE also do not help in drawing uniform conclusions regarding relationship of Participation scores with the scores on the four components of the TAPE separately in the three groups of institutions. The data show that whereas the teacher participation scores are significantly and positively correlated with the scores on the 'Faculty' and 'Student' component of the TAPE in the nursing and combined group of nursing and teacher training institutions, it is significantly correlated with the scores on only the 'Administration' component of the TAPE in the teacher training institutions, and in this case the data do not suggest that the increase in the number of observations would make any difference in the pattern of findings.

Further support for the acceptance of the hypothesis of positive relationship between the availability of participation to teachers and their perception of the climate of their institution is obtained when the data in Table 6 is examined with a view to test the hypothesis that teachers in institutions with high participation scores will perceive the climate of their institution more favourably than those in institutions with low participation scores, or in other words, high 'teacher participation' institutions will produce higher climate scores than low 'teacher participation' institutions. Table 6 shows that there is a significant difference between the Mean Climate scores of the combined group of nursing and teacher training faculty in institutions with high and low 'teacher participation' scores, in each case whether the institutions are classified as high/low in terms of participation by using Median or 27% top-bottom scores criterion. The 't' values of 4.78 and 5.50 between Climate scores of high and low 'teacher participation' institutions, when institutions are classified using Median and 27% top-bottom criterion respectively, are both significant at .01 level.

The conclusion about the retaining of the hypothesis drawn from the data for the combined group of nursing and teacher training institutions holds good for the four components of the TAPE as well, the College, Faculty, Students and Administration. The 't' values of 3.23, 2.87, 4.26, and 3.10 between the Climate scores on the 'College', 'Faculty', 'Students' and 'Administration' component of the TAPE respectively when institutions are classified as high/low 'teacher participation' using the Median criterion, and the 't' values of 2.74, 5.03, 4.72, and 3.04 for the Climate scores on the same four components respectively when institutions are classified as high/low 'teacher participation' using 27% top-bottom scores criterion, are all significant at .01 level except the 't' value of 2.74 on the 'College' component when institutions are classified in the two categories using 27% top-bottom criterion, which is significant at .05 level.

The analysis of data according to the two groups of professional colleges, nursing and teacher training, suggests as in respect of the teachers' satisfaction, differential effect of the variable of participation in the two types of professional colleges. As for satisfaction, the data suggest that the hypothesis of significant difference between Mean Climate scores in high and low 'teacher participation' training institutions be accepted, but it should be rejected in the nursing institutions. Table 6 shows that the 't' value of 3.06 between Mean TAPE scores of high and low 'teacher participation' teacher training institutions is significant at .01 level, but that the corresponding 't' value in nursing institutions is not significant. However, unlike the differential effect of the variable of teacher participation on the TAPE score in the nursing and teacher training institutions, the scores on the four components of the TAPE in the two categories do not relatively show that much of the differential effect. The data show that except in the case of the component 'Administration', the effect of the variable of teacher participation on the teachers' perception of their 'College', 'Faculty', and 'Students' in both the categories of institutions is the same in the sense

that if the difference between the Mean score on a component is significant or not significant between high and low 'teacher participation' nursing institutions, then it is likewise significant or not significant in teacher training institutions as well. The differential effect of the availability of teacher participation on the teachers' perception of their institution's climate suggests that : (i) availability of teacher participation is not perceived an equally important determinant of the institution's climate in the two categories of professional colleges, (ii) in teachers' colleges availability of participation to teachers will have positive influence on the perception of the climate of their college as good or congenial, and (iii) in nursing colleges, climate is perceived good or bad, congenial or uncongenial more for reasons other than the availability of participation or share in administration of the institution, and may be, as with their satisfaction, the reason may lie in the process of their work itself.

Hypothesis 4 : "There will be positive relationship between perceived institutional climate and satisfaction of teachers and that teachers in institutions with high satisfaction scores will perceive the climate of their institution more favourably than those in institutions with low satisfaction scores." Among the five studies of correlates of Satisfaction with the institutional Environment, two (Pervin, 1967; Berdie et al., 1970) deal with students' satisfaction and three (Taylor, 1968, Smith, 1974; and Bruce, 1974) are concerned with the study of the relationship of teachers' satisfaction with perceived institutional climate. As in these studies, the ratings of satisfaction with job/college are found to be related with the ratings of college environment in the present study also. From the correlation matrix (Table 4) it is observed that the correlation of .364 df 30 between the Mean Satisfaction scores and the Mean TAPE scores in the combined group of 32 nursing and teacher training institutions is significant at .05 level and this suggests that the hypothesis: 'Perception of the institutional environment will have direct bearing on teachers' satisfaction with the institution,' should be retained. However, all the four aspects or components of institutional environment included in the TAPE instrument are separately not significantly related to teachers' satisfaction. Significant correlation with teachers' satisfaction are noted in only two of the four components viz. perception of 'Faculty' and perception of 'Students'. Perceptions of 'Administration' and 'College' are not significantly related with teachers' satisfaction. Although Taylor's (1968) also rejected the hypothesis of positive relationship with five out of the eight aspects of institutional environment, but contrary to the findings of the present study, Taylor (1968) reported instructor's evaluation of (i) Board's interest in the institution and the faculty, (ii) Relation with administration, (iii) Administrative policies and practices, as the most important single environmental factor in predicting faculty job satisfaction, and relation with faculty colleagues as not significantly related to faculty job satisfaction. Bruce's (1974) finding that perceptions of job satisfaction and perceptions of organizational bureaucracy are significantly related also runs counter to the findings of the present study. One conclusion that emerges from these somewhat contradictory findings is that whereas the source for teachers' satisfaction with their institution in India lie more in their friendly and positive relationship with their faculty colleagues and students than in their relation with administration and perceptions of administrative policies and practices, the American teacher feels satisfied or dissatisfied with his institution depending more on the kind of relation he has with the administration and on his perception of the administrative policies and practices of his institution than his rapport with his faculty colleagues and his students.

The hypothesis of significant positive relationship between teachers' satisfaction with the institution and the perceived institutional climate is though upheld in the combined group of 32 nursing and teacher training institutions, it tends to be completely rejected in both the nursing and teacher training institutions, when considered separately. Correlations of .294, .046, .482, .515 and —.018 (Table 2) between teacher satisfaction scores and the scores on TAPE and the four components of TAPE, 'College', 'Faculty', 'Students', 'Administration', respectively in the 14 nursing institutions are not significant. Similarly, correlations of .443, .270, .411, .258, and .441 (Table 3) between teacher satisfaction scores and the scores on TAPE and the same four components of the TAPE in the 18 teacher

Table 6

MEAN, STANDARD DEVIATION AND 'T' VALUES OF CLIMATE SCORES AS GIVEN BY TEACHERS IN INSTITUTIONS WITH HIGH AND LOW TEACHER PARTICIPATION SCORES USING MEDIAN AND 27% TOP-BOTTOM SCORES FOR CLASSIFICATION OF INSTITUTIONS IN THE TWO CATEGORIES

Institutions	High Participation Climate Scores					Low Participation Climate Scores				
	Median Criterion					Median Criterion				
	C	F	S	A	T	C	F	S	A	T
Nursing										
Mean	187.48	202.30	189.59	179.63	759.00	176.37	173.48	168.91	154.50	693.33
S.D.	23.748	16.049	10.868	32.933	39.438	25.436	26.560	24.602	25.776	100.13
't'	.84	2.45	2.02	.32	1.61	.84	2.45	2.02	.32	1.61
Teacher Training										
Mean	190.91	199.94	183.58	192.53	766.96	174.34	173.22	171.78	160.03	670.38
S.D.	19.113	29.824	21.969	25.724	72.599	17.144	14.223	12.981	15.282	45.593
't'	1.93	2.42	1.386	3.25	3.06	1.93	2.42	1.386	3.25	3.06
Combined										
Mean	192.49	203.18	188.09	1.1.38	775.14	172.16	171.13	168.67	161.86	673.82
S.D.	21.058	23.594	17.711	28.500	54.568	18.839	18.674	17.715	17.996	64.779
't'	2.87	4.26	3.10	3.50	4.78	2.87	4.26	3.10	3.50	4.78
27% Top-Bottom Criterion										
Mean	193.26	207.35	192.09	187.34	780.05	168.93	171.25	167.48	156.11	663.77
S.D.	22.127	16.938	10.250	30.074	47.700	17.205	15.219	12.887	12.075	46.671
't'	2.74	5.00	4.72	3.04	5.50	2.74	5.00	4.72	3.04	5.50

Symbols : C—College, F—Faculty, S—Students, A—Administration, T—TAPE

training institutions, are not significant. The not-significant correlations when the two groups of institutions are considered separately, but significant correlations when the institutions are combined, and as a result the number of observations are increased, may though appear paradoxical, but to a large extent it explains the distortions in the findings. From the findings it is obvious that the value of correlations are a great deal related to the number of observations taken for computing correlation and since the number of observations in the nursing and teacher training institutions considered separately is relatively small, account for the not-significant correlations. Perhaps, and this could be a problem of further inquiry, if the number of observations in the two categories of institutions could be increased, they would also have yielded significant correlations and contributed to the accepting of the hypothesis.

In the attempt to seek further support to the findings obtained from the computation of correlations, when the data in Table 7 is examined to test the hypothesis that teachers in institutions with high 'teacher satisfaction' scores will perceive their institution's climate more favourably than those in institutions with low 'teacher satisfaction' scores, it is found that the findings are exactly similar to that obtained from the analysis of correlations in the combined group of nursing and teacher training institutions, when Median is used as a basis for classifying institutions in the two categories—high and low 'teacher satisfaction' institutions. The findings however, are not supported when the 't' values between the Climate scores of high and low 'teacher satisfaction' institutions, using 27% top-bottom scores criterion for classifying institutions in the two categories, are considered. Table 7 shows that the 't' values of 2.34 between Mean TAPE scores and of 2.64 and 2.13 between Mean scores on 'Faculty' and 'Students' component respectively of TAPE in the high and low 'teacher satisfaction' institutions, when Median is used for classifying the institutions in the two categories, are significant, but none of the 't' values between scores on TAPE and its four components in high and low 'teacher satisfaction' institutions when 27% top-bottom criterion is used for classifying the institutions in the two categories, is significant. There is no doubt that the differential effect of 'teacher satisfaction' on the 'Climate' scores of institutions classified as high and low 'teacher satisfaction' institutions by the two methods of classification of institutions—Median and 27% top-bottom scores, raises some difficulty in accepting the hypothesis of significant difference in the perceived climate of institutions between high and low 'teacher satisfaction' institutions, but the fact that correlations between teacher satisfaction and perceived climate scores are found significant, there is enough reason to retain the hypothesis with the reservation that further verification should be attempted with a larger sample of institutions so that the number of institutions in the two categories, when institutions are classified as high and low, is significantly increased.

The analysis of data according to the two groups of professional colleges, nursing and teacher training, shows that there is significant difference between the two categories of institutions in respect of the bearing teacher satisfaction scores has on the teachers' perception of their institution's climate. While the findings in nursing institutions are completely in accord with the findings for the combined group of nursing and teacher training institutions, they are completely at variance in the teacher training institutions. Table 7 shows that whereas none of the 't' values between Mean scores on the TAPE and its four components in high and low 'teacher satisfaction' institutions of teacher training is significant, but they are significant in the nursing institutions in respect of the Mean TAPE scores and the scores on the 'Faculty' and 'Students' components of the TAPE. Again, in the context of there being no significant correlation between teacher satisfaction and teachers' perception of their institution's climate in both nursing and teacher training institutions, and there being a significant difference in the nursing faculty's perception of their institutional climate (in three of the five variables used for assessing the climate) between high and low 'teacher satisfaction' institutions, and there being no significant difference on these variables high and low 'teachers satisfaction' teacher training institutions, no definite conclusion with respect to acceptance or rejection of the bearing

Table 7

MEAN, STANDARD DEVIATION AND 'T' VALUES OF CLIMATE (TAPE) SCORES AS GIVEN BY TEACHERS IN INSTITUTIONS WITH HIGH AND LOW TEACHER SATISFACTION SCORES USING MEDIAN AND 27% TOP-BOTTOM SCORES FOR CLASSIFICATION OF INSTITUTIONS IN THE TWO CATEGORIES

	High Satisfaction Climate Scores						Low Satisfaction Climate Scores					
	Median Criterion						Median Criterion					
	C	F	S	A	T		C	F	S	A	T	
<i>Nursing</i>												
Mean	192.29	202.96	194.29	182.84	772.39		171.56	172.82	164.27	171.29		679.94
S.D.	24.549	16.392	7.615	33.684	38.323		21.334	25.601	20.674	23.680		89.421
't'	1.68	2.62	3.60	.742	2.51		1.68	2.62	3.60	.742		2.51
<i>Teacher Training</i>												
Mean	182.82	194.92	178.68	184.11	740.53		182.44	178.24	176.68	168.45		705.81
S.D.	23.185	31.206	22.928	29.542	84.385		16.089	18.330	13.893	20.685		58.838
't'	.40	1.38	.22	1.30	1.01		.40	1.38	.22	1.30		1.01
<i>Combined</i>												
Mean	186.96	198.44	185.51	183.55	754.47		177.68	175.87	171.25	169.69		694.49
S.D.	24.251	26.100	19.520	31.427	69.987		19.335	21.976	18.262	22.090		74.903
't'	1.19	2.64	2.13	1.44	2.34		1.19	2.64	2.13	1.44		2.34
27% Top-Bottom Criterion												
<i>Combined</i>												
Mean	182.65	197.91	187.84	181.95	751.35		178.66	179.68	172.25	167.32		697.91
S.D.	26.991	27.286	21.803	36.997	78.144		12.686	15.890	11.215	17.020		47.887
't'	.52	2.82	1.01	1.13	1.84		.52	1.82	2.01	1.13		1.84

Symbols : C—College, F—Faculty, S—Students, A—Administration, T—TAPE

of teacher satisfaction on teachers' perception of their institution's climate in the two categories of institutions is made even though at least in teacher training institutions the use of both correlations as well as the 't' values suggest that the hypothesis should be rejected. But as stated earlier further verifications are needed with use of larger sample of institutions to arrive at a more specific and definite generalization.

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ABILITIES AND SUBJECT SPECIALIZATION

Four hundred and eighty nine college graduates from various disciplines, arts, languages, mathematics, Engineering and Sciences—both boys and girls sat for a common entrance examination for Post-Graduate admission. This entrance examination comprised a standardised battery of seven ability tests in

- (a) language usage
- (b) verbal reasoning
- (c) abstract reasoning
- (d) numerical ability
- (e) reading comprehension
- (f) spatial relationship, and
- (g) speed and accuracy.

The situation provoked the following questions :

- (1) What is the relationship between subject specialization in the undergraduate courses and the achievement in the various ability tests ?
- (2) Do language students have significantly higher linguistic ability than the other students ?
- (3) Do Science students significantly differ from the other groups of students in some specific reasoning ability ?
- (4) Do Mathematics students significantly differ from the other students in numerical ability ?
- (5) Do commerce students significantly differ from the other students in any ability ?
- (6) Do students who have studied Science/Mathematics significantly differ from those who have studied Arts/Languages ?
- (7) Do students who have done Engineering differ significantly from the other groups of students in any specific ability ?
- (8) Do students of the various branches of Arts have similar profiles in terms of their abilities ?
- (9) Do students of the various branches of Science/Maths/Technology have similar profiles in terms of their abilities ?
- (10) Do the students with P.G. qualification differ significantly from the other students?

Aptitude/ability tests have been used as tools to predict the scholastic achievement by Desai (1954) Ahuja (1961) Mehrotra (1972) and Ray (1972). positive correlation between scholastic achievement and aptitude has been reported by Pande (1978). Palkar (1973) has compared the proficiency of students of Mathematics and English in numerical ability.

Analysis

The total sample of 489 graduates represented 11 disciplines and all the candidates with P.G. degree were put in one group. The ratio of male to female graduates was 10:1. The majority of the students were from Tamil Nadu and a few were from the neighbouring states such as Kerala and Karnataka. The age of the subjects varied, the average clustering around 23 plus.

Raw scores of the inventory were tabulated, the total scores were averaged, with S.D. and variance and using S.D. and variance 't' scores were calculated to find out the significance of difference between Means.

Table 1 gives the distribution of the mean scores obtained by the candidates belonging to the various disciplines.

APTITUDE PROFILE

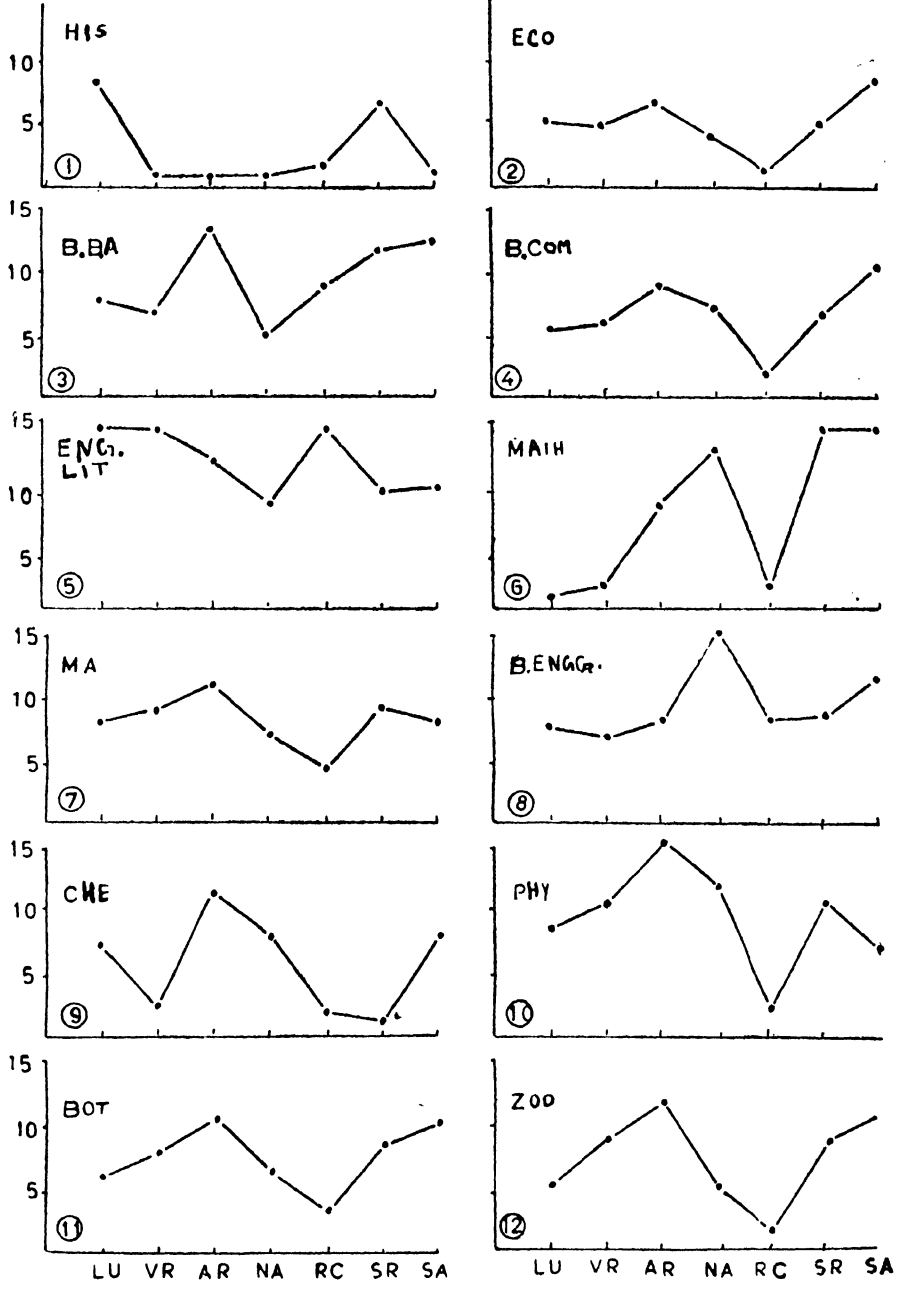


Table 1

<i>Discipline</i>	<i>Score</i>
1. (B.A.) English language Literature	170.91
2. (B.E.) Engineering	166.0
3. (B.B.A.) Business Administration	156.6
4. (B.Sc) Physics	150.97
5. (B.Sc) Chemistry	150.38
6. (B.Sc) Mathematics	149.93
7. (B.Com) Commerce	147.15
8. (B.Sc) Zoology	146.68
9. (B.Sc) Botany	144.53
10. (B.A.) Economics	134.33
11. (B.A.) History	106.6
12. (M.A.) Post graduates	152.57

It is seen that the highest mean for the whole test is obtained by the graduates in English Literature and the lowest by graduates in History, the Sciences ranking from 4th to 9th position. The Figs. 1 to 12 give the profile of each group, ability wise.

Profiles

The profiles of mathematics and Engineering graduates exhibit similar pattern of peaks and dips. (Fig. 16).

All the science graduates of all the branches—physics, chemistry, Botany and Zoology are superior to the others in their abstract reasoning ability and significantly lower in their reading comprehension ability (figs. 13 & 14).

The graduates of History and Commerce also are low in their reading comprehension. (figs. 11 & 4).

The History graduates occupy the second position in language usage but have scored poorly in verbal reasoning and comprehension. It is strange that the students with post graduate qualification have not scored better in any of the abilities than the graduates (fig. 7).

The general performance of Arts graduates is found to be better than the science graduates in the areas of language usage, verbal reasoning and reading comprehension (fig. 18). Similarly, the general performance of the Science graduates (including Mathematics and Engineering) is better than the Arts graduates in the four categories of abilities abstract reasoning, numerical ability, spatial relationship and speed and accuracy (figs. 14 and 16).

The profile pattern of English Literature group and the mathematics group—the peaks and the dips—is typical of graduates of all Arts put together and all sciences put together. Excepting for the abstract reasoning ability, the distribution pattern of the abilities are very typical, the arts graduates excelling in language usage, verbal reasoning and reading comprehension and the Science graduates excelling in numerical ability, spatial relations and speed and accuracy. (Fig. 17).

Analysis—Ability wise

Graduates of English Literature are found to be superior to all other students in Reading comprehension and in verbal reasoning. Regarding language usage the difference is not significant.

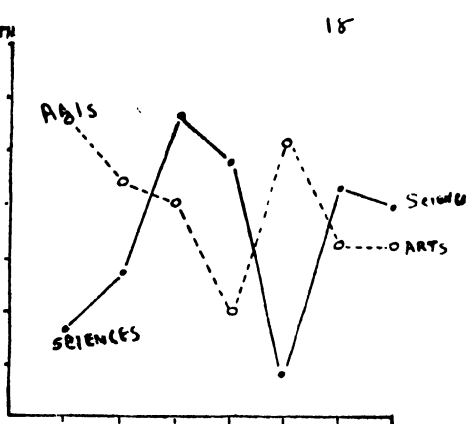
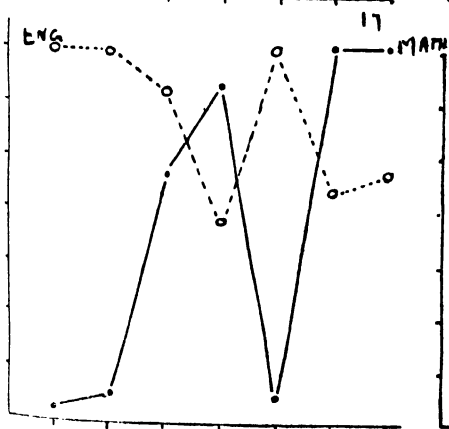
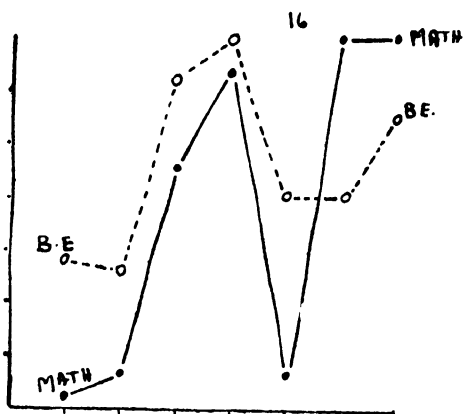
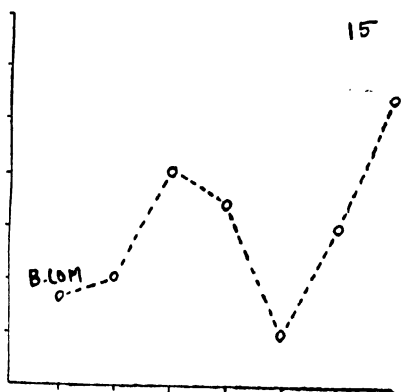
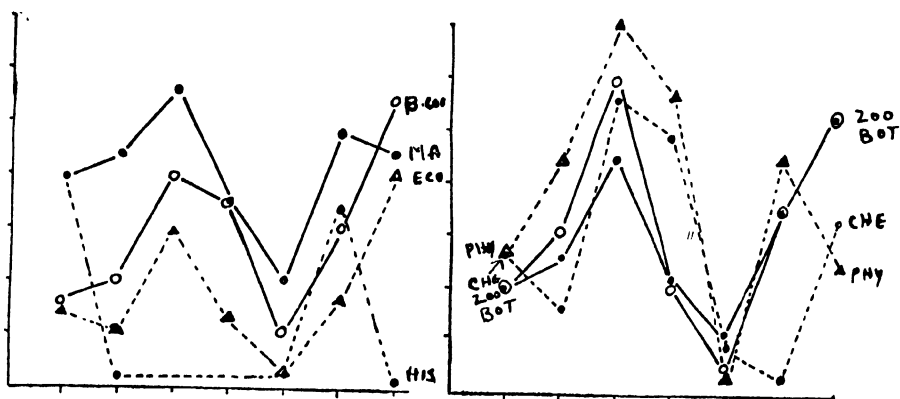


Table showing distribution of 't' values between graduates of English literature and other students.

<i>Ability</i>	<i>'t' value</i>	<i>Significant Level</i>
Reading Comprehension	2.66°	.05
Verbal Reasoning	11.28°	.05
Language usage	1.75°°	.05

°significant.

°°Not significant.

Reasoning—Abstract & Spatial

Science students differ significantly from the other group of students in their abstract reasoning and spatial abilities.

Table showing the distribution of 't' value between science students and other students.

<i>Ability</i>	<i>'t' Value</i>	<i>Significant Level</i>
Abstract reasoning	9.94°	.05
Spatial ability	7.27°	.05

°Significant

Numerical Ability

Mathematics students differ significantly from the other groups of students in Numerical ability.

Table showing the distribution of 't' values between Maths students and other students.

<i>Ability</i>	<i>'t' Value</i>	<i>Significant Level</i>
Numerical ability	10.36°	.05

°Significant

Commerce students do not differ significantly from the other students in any ability.

Science Students Vs Humanity Students

Science students differ significantly from the Humanity students in certain abilities. They are, language usage, numerical ability, and speed and accuracy. Humanity student perform significantly better than the science students in reading comprehension ability.

Table showing the distribution of 't' values between Science students and Humanity students.

<i>Ability</i>	<i>'t' Value</i>	<i>Significant Level</i>
1. Language usage	4.17°	.05
2. Verbal Reasoning	0.68°°	.05
3. Abstract reasoning	9.94°	.05
4. Numerical ability	10.54°	.05
5. Reading Comprehension	32.22°	.05
6. Spatial relationship	7.27°	.05
7. Speed and accuracy	1.59°	.05

°Significant.

°°Not significant.

Engineering Students

They differ significantly from the other groups of students in the Numerical Ability.

TABLE SHOWING THE DISTRIBUTION OF 't' VALUE

<i>Ability</i>	<i>'t' value</i>	<i>Significant level</i>
Numerical ability	5.51°	.05

°Significant

Post Graduate students vs graduate students

Post graduate students differ significantly from graduate students in verbal reasoning, Numerical Ability, and also in speed and accuracy.

They do not differ significantly in language usage, abstract reasoning, reading comprehension and spatial relationship.

TABLE SHOWING THE DISTRIBUTION OF 't' VALUE

<i>Ability</i>	<i>'t' value</i>	<i>Level of significant</i>
1. Language usage	0.28°°	.05
2. Verbal reasoning	2.26°	.05
3. Abstract reasoning	1.58°°	.05
4. Numerical Ability	4.17°	.05
5. Reading Comprehension	0.75°°	.05
6. Spatial relationship	1.86°°	.05
7. Speed and accuracy	2.61°	.05

°Significant

°°Not significant

True, the subject specialization of the learner is mostly an expression of the degree of attachment of the learner towards the subject.

The selection of subjects when our students join colleges is arbitrary and not based on any aptitude testing. But the study does reveal that those who have chosen the various subject specializations have developed the specific intended abilities through the academic expressions they have had in the colleges—we are not aware whether these students did or did not have the necessary aptitude level at the beginning of the course.

We have to agree with Anastasi (1961) in explaining the high achievement of English language literature students—that the superior verbal ability gives advantage to the students of English in answering the sub categories of the test battery.

J.K. Pillai and J. Gabriel

AGRICULTURAL RESEARCH SERVICE SCIENTISTS : THEIR VALUE ORIENTATION AND OVERALL MODERNITY

The effectiveness of a research organisation depends upon the quality and quantum of work done by its scientists. The scientists in turn have to be effectively helped by technical, administrative and supporting personnel. Only when every one in the system functions in a harmonious manner like members of a symphony orchestra, the return from investment in research increase. The personnel policies of a research organisation, therefore, have to be so oriented as to serve the specific needs of that organisation. Keeping this in mind the Indian Council of Agricultural Research (ICAR) decided to restructure its personnel policies towards all the categories of staff—scientific, technical, administrative and supporting. For scientific staff, an Agricultural Research Service (ARS) was started from October 2, 1975. And majority of the existing scientists have been inducted in this newly formed Agricultural Research Service. Also new recruitment has been started since 1976 through All India ARS Examination. The scientists those are in that service are called Agricultural Research Service Scientists and they are the subject of this present study.

A scientist, first of all, is an individual. So the quality and quantum of his research work will be very much dependent on his socio-psychological behaviour in the form of his attitude, belief, skill and values. Efficiency and effectiveness of his work will be affected if his said behaviour do not flow in desired direction. Particularly value orientation and over-all modernity of the individual play a significant role in determining his characteristics in relation to his work for which he is assigned. Considering these facts present researcher took up this study to find out particularly those two important socio-psychological traits namely, value orientation and overall modernity of Agricultural Research Service Scientists working in various ICAR Institutes in different parts of India.

Methodology

The *value-orientation* (fatalism—scienticism) is a dimension of values in the Man—Nature Orientation. Here, the concept of fatalism has been defined as a belief that human situations and acts are predetermined by some supernatural power and can never or little be influenced by individual volition or by act of any one else. On the other hand scienticism has been defined as a belief that situations are the result of natural and/or social forces which can be understood and changed by human volition or by human action. And the value orientation of the Agricultural Research Service Scientists was studied on fatalism—scienticism dimension developed by Chattopadhyay (1963). The criteria of scoring was conceptually unidimensional. High scores in the scale indicated high degree of fatalism.

As regard to *overall modernity* in this study modernity has been conceptualised as predisposition towards change from traditional to a modern way of life. Overall modernity scale developed by Inkeles (1967) was used by the Indian Institute of Mass Communication

(1968) in its "Communication Study of National Integration and Secularism". This overall modernity scale was used in the present study to measure the overall modernity of ARS Scientists working in ICAR Institutes.

The other background information which are having relevance with their value orientation and overall modernity like age, education, religion, family type, family size, annual income and experience (total years of service) of the scientist respondents have also been studied in this regard. The study was conducted in National Academy of Agricultural Research Management, Rajendranagar, Hyderabad where the ARS Scientists of ICAR came for undergoing training on Agricultural Research Management during December, 1981 to February, 1982.

Sixty-six scientists of S-1 grade belonging to different disciplines of Agriculture, Animal Husbandry and Fishery Sciences of 12 different ICAR Institutes had been selected as sample for the present study. Necessary data were collected from these 66 scientists through the structured questionnaire specially made for this study.

Results and Discussions

The background information of scientists like age, education religion, family type and size, annual income and total years of service experience were collected through questionnaire from the 66 selected respondents and presented in Table 1 and 2 after computation.

Table 1

DISTRIBUTION OF RESPONDENTS IN RELATION TO THEIR AGE, RELIGION, FAMILY TYPE, FAMILY SIZE AND ANNUAL INCOME

<i>Characteristics</i>	<i>No. of Respondents N 66</i>	<i>Per cent</i>
A. Age in completed years		
(a) Upto 30	1	1.516
(b) 21 to 40	26	39.400
(c) 41 to 50	35	53.020
(d) 51 to 60	4	6.064
B. Religion		
(a) Hindu	60	90.904
(b) Muslim	4	6.064
(c) Christian	1	1.516
(d) Jain	1	1.516
C. Family type		
(a) Nucleus	39	59.083
(b) Joint	27	40.917
D. Family size		
(a) Upto 5 members	43	65.146
(b) 6 members and above	23	34.854
E. Annual income		
(a) Upto Rs. 15,000	2	3.031
(b) Rs. 15,001 to Rs. 20,000	26	39.401
(c) Rs. 20,001 to Rs. 25,000	36	54.537
(d) Rs. 25,001 to Rs. 30,000	2	3.031

Table 2

DISTRIBUTION OF RESPONDENTS IN RELATION TO THEIR EDUCATIONAL BACKGROUND AND TOTAL YEARS OF SERVICE EXPERIENCE

<i>Characteristics</i>	<i>No. of Respondents</i> N=66	<i>Per cent</i>
A. Educational background		
(a) Masters' degree (M.Sc./M.V.Sc./M.Sc. (Ag.))	41	62.115
(b) Doctorate Degree (Ph.D/D.Phill/D.Sc.)	25	37.885
B. Total years of service experience		
(a) Upto 10 years	17	25.760
(b) 11—20 years	34	51.500
(c) 21—30 years	15	22.740

It was evident from the Table 1 that a larger part of the respondents (53 per cent) belonged to the older age group (of 41—50 years) and Hindu religion (90.9 per cent). The table also revealed that out of 66 respondents 39 (59 per cent) were having nucleus family and 43 (65 per cent) scientists each had only 5 or less number of family members. But interestingly table showed that all most all the respondents (94 per cent) belonged to the higher income group Rs. 15001/- to Rs. 25,000/- per annum).

Similarly, Table 2 revealed that all the respondents were having minimum Master's degrees as their educational status and 25 of them (37.88 per cent) were having Doctorate degrees too. It was also seen from the table that 51.5 per cent respondents have already put 11 to 20 years of services in their respective fields. And 22.74 per cent scientists were having even 21—30 years of service experience. The minimum educational qualification for entering into Agricultural Research Service is Master's degree and this might be the cause for acquisition of their highest University degrees.

The value orientation (Fatalism—Scienticism) and overall modernity of the scientist respondents were also studied and measured through the established respective scales and results of which are presented in Table 3.

Table 3

DISTRIBUTION OF RESPONDENTS ACCORDING TO THEIR VALUE ORIENTATION AND OVERALL MODERNITY SCORES

<i>Variables</i>	<i>No. of Respondents</i> N=66	<i>Per cent</i>
A. Value Orientation		
(a) High (21—26)	2	3.032
(b) Medium (15—20)	40	60.599
(c) Low (9—14)	24	36.369
B. Overall Modernity		
(a) High (28—31)	32	48.490
(b) Medium (24—27)	34	51.510
(c) Low (23 and below)	0	0

Table 3 reported that a majority of the respondents (60·59 per cent) had medium value orientation. It indicated that majority of the scientists were not wholly fatalistic not scientific in their outlook and approach. Only 36·37 per cent of the respondents believed on fate fully as they perceived that "Every event in mans life has already been settled and determined by his fate' or "A basic tragedy is that man proposes but God disposes" (Value Orientation scale : Chattopadhyay, 1963).

It may be said that the Agricultural Research Service Scientists were not highly oriented towards their values. This might be due to their religious background as 90 per cent of them belonged to Hindu religion (Table 1).

Similarly, Table 3 pointed out that 48·49 per cent respondents had high overall modernity scores which meant that they had modern thinking in perception and behaviour, and rest of the respondents (51·51 per cent) had medium overall modernity scores. These high and medium overall modernity scores of scientists might be due to their highest educational status (Table 2) and more exposure and interaction with outside world and people as indicated in their service experience (Table 2).

Conclusion

It may be stated from the above findings that for improving the work efficiency of the Agricultural Scientists and the effectiveness of research organisation, the Scientists should try to change their fatalistic outlook to scientific outlook. In other words, the value orientation of scientists should be directed towards desired scientific way than the fatalistic one. Further, they should develop their overall modernity still higher, so that they can cope up with the quantum of research work compatible with latest technological and agricultural innovations.

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Communications

THE CHILD DEVELOPMENT CURRICULUM AND ITS RELEVANCE TO JOB COMPETENCIES EXPECTED IN THE FIELD

Over the years there has been an increasing awareness of the importance of Child Development as a special discipline of study and the significant contribution it can make toward effective services for the child and the family. Recognition of the role of the child development worker in understanding and facilitating the healthy growth of the total child and his family, has dispelled the lurking doubts as to whether such specialization has a contribution to make over and above that of social work, education, clinical services and the like.

The major credit for achieving such a recognition and credibility goes to the child development worker herself. Despite the inevitable teething trouble, the child development worker has succeeded in carving a niche for herself as a significant member of a team of workers providing services for children (The choice of the feminine gender is not so much a reflection of the women's lib as of the fact that the discipline, in our country is almost the sole monopoly of women!).

Completion of a quarter century of existence as a Department gave us an opportunity to take stock and assess the existing curriculum in Child Development and ask: For what kind of jobs are we preparing the child development workers? Do the competencies developed in the existing program of study and those expected in the jobs match? Furthermore, what about new job possibilities with new job requirements?

The search for an answer to some of the queries raised above, provided the rationale for the present study. The present study aimed at evaluating and revising the Child Development curriculum, with the view of increasing its relevance and usefulness in the light of the competencies expected of the child development workers in fulfilling their job demands. The views of the alumni and of experts in Child Development and allied disciplines regarding the curriculum requirements that will rectify the present gaps in training, and meet the present and future job demands in the field, were focussed upon.

It was hoped that the study would serve a two-fold purpose of giving a feedback for curriculum revision, and also suggesting job possibilities, both for the present and future, thereby facilitating effective job placement of child development graduates.

The investigation concentrated primarily on the alumni and the curriculum of the Department of Child Development at the M.S. University of Baroda, since the good in-

tentions of broadening the coverage to include graduates in Child Development from other universities did not prove very fruitful.

Method

The main objectives of the research project were : (1) to identify the nature of jobs taken up by the alumni of the Department of Child Development, M.S. University, Baroda and the competencies required in the jobs, (2) to evaluate the extent to which the curriculum of the department has helped the alumni in developing these competencies ; and (3) to make necessary modifications in the curriculum with the view of increasing its relevance in the light of competencies expected in the field.

Subjects : (1) Out of 603 alumni whose names were identified from the enrolment registers, since 1950, 440 addresses were identified. The number of alumni who responded to the initial questionnaire were 197 (71 M.Sc.s.; 66 B.Sc.s.; and 60 Post-graduate Diploma holders). (2) Based on the information received from the above, as well as additional contact addresses obtained from them, 215 alumni who had been employed at some period or the other after graduation, were contacted through a second questionnaire; of these 107 responded (44 M.Sc.s.; 31 B.Sc.s.; 31 P.G. Dips.). (3) A sample of 41 experts in the field of Child Development and related disciplines were interviewed on their opinions regarding the Child Development training program. The interviewers hailed from Baroda, Ahmedabad, Bombay, Poona, New Delhi, Udaipur, Madras, Bangalore and Mysore.

Tools : A semi-structured questionnaire was used for obtaining preliminary background information from the alumni, as well as some generic feedback on the curriculum and alumni's professional experience. (2) A structured questionnaire was used to obtain information on competencies required for various job positions. The specified competencies related to knowledge, abilities, skills, and personal qualities required for the job(s) held by the respondent. These were followed by some open ended questions seeking recommendations for improving the curriculum. (3) The tool used with the experts and employers consisted of an unstructured open-ended interview schedule which sought information on jobs held by Child Development workers, responsibilities associated with these jobs and competencies required to fulfill these responsibilities, gaps in the training, need for para-professional Child Development workers, and related information.

Procedure : The two sets of questionnaires were mailed with two reminders for each. The interviews were conducted in the various cities with prior appointment from experts/employers. A framework of the interview questions were sent at least a week prior to the interview in order to obtain well considered opinions. In two cases where the appointments were cancelled the interviews responded by mail.

Plan of Analysis : Data from all three sources have been analysed separately both quantitatively and qualitatively and then presented in an integrated manner highlighting the recommendations that merge for revitalizing the child development curriculum.

Major Findings

Child Development Curriculum and its Relevance to Job Competencies Required in the Field: (Responses of Alumni n=107)

(I) AREAS OF KNOWLEDGE CONSIDERED IMPORTANT

(a) Knowledge of Human Relations and Behavior including General Psychology-Physical Growth and Development, Environmental factors affecting development, Characteristics of various age groups, Individual differences; and Parent and Community Education received highest emphasis.

(b) Knowledge of case-work techniques including individual approach, group work, and guidance and counselling were emphasized by all (i.e. University and school teachers, Social workers, and special education teachers) except research workers. The latter considered knowledge in this area as not very important to their job.

(c) Knowledge in selected areas received emphasis only from those who held specific job positions and not from others. These include : (i) Knowledge of Family and Society emphasized by Research workers but not by alumni in other job positions ; (ii) knowledge of Early Childhood Education emphasized only by University and School teachers; (iii) knowledge of Special Education considered important by all Special Education Teachers (n=3), (iv) knowledge of Child and Family welfare considered necessary, by University Teachers and Social Workers; (v) knowledge of agencies sponsoring and funding field action and research programs, and dissemination of information considered essential by Research Workers and Social Workers. Research Methods, Statistics and research related information considered by Research Workers only (n=18).

(II) ABILITIES CONSIDERED IMPORTANT

(a) Abilities emphasized as important in the area of cognitive competence by a majority of the respondents include : long range vision, clarity of thought, creative thinking, proper perspective, and ability to integrate, interpret and utilize necessary information.

(b) Abilities emphasized in the area of social competence include :

- (i) *Group work related competencies* such as ability to put across an idea lucidly, ability to arouse the interest and motivation of the group, ability to maintain the involvement and co-operation of the group, ability to understand one's own role in the group work in co-ordination with others, and maintain a healthy working climate;
- (ii) *Competencies related to working with individuals* such as build up morale, identify assets and limitations, assign tasks and responsibilities according to abilities and interests, plan and set appropriate objectives, and provide guidance and counselling.

(c) Other abilities which received a high rating from the group on the whole included, ability to handle emergencies, to maintain and promote professional ethics, and to maintain records, progress reports, and data sheets.

(d) Abilities related to maintaining effective contacts with the various agencies, resource persons, and funding agencies was considered important only by social workers and not so by a majority of the other groups.

(III) SKILLS CONSIDERED IMPORTANT

(a) Skills emphasized by a large majority included those involved in working with others, such as building rapport, being observant, getting along with and relating to children, adults, colleagues, and the management, as well as communication skills such as use of voice and language, and adaptation of techniques to various group settings. Efficiency and neatness, as well as skills in systematic organization, recording and filing were also emphasized by a large majority.

(b) Skills in interviewing were considered important only by research workers and social workers; skills in guidance and counselling were considered important by a majority of university and school teachers, and social workers, but as not important by the research workers.

(c) Two items rated as low in importance by all category of employees include (i) skills in use of psychological tests, and (ii) skills in preparation and use of audio-visual aids.

(IV) PERSONAL QUALITIES CONSIDERED IMPORTANT

(a) Personal qualities considered important by all category of employees included those related to cognitive competence like, open mindedness to ideas and people, analytical thinking, alertness, imagination, intelligence, flexibility, perceptability, perseverance, creativity, good memory, curiosity, diligence and objectivity. and those related to social competence like, sensitivity, tolerance and patience, understanding, confidentiality, integrity, confidence, sincerity involvement and interest, sense of responsibility, efficiency, approachability and sense of professional ethics.

Recommendations for Enriching the Child Development Curriculum:

'Suggestions from experts and employers (n=41)

(1) There is an urgent need to include courses related to Child Health and Nutrition, Infancy, and Special Education for the Handicapped and Exceptional Children, and Psychological Measurement. A number of other optional courses should be offered. Existing courses in Research Method and Statistics, Family and Child Welfare, Family and Society need to be strengthened.

(2) In terms of practical training, there is need for exposing the trainees to varied and intensive field experiences especially with the underprivileged urban, tribal and rural population, and for adopting an interactional and participatory approach in field training. Skills in management, administration and supervision need to be developed through close supervision and guidance.

(3) *Other Recommendations*

It is further recommended that :

- (a) In order to establish an identity of its own, the Child Development Curriculum must move away from the umbrella of Home Science.
- (b) Specialization at various levels should be introduced.
- (c) In order to gain recognition in the society as a whole, the Child Development Department must develop an aggressive attitude and set itself.
- (d) The Child Development Department should make its research studies widely publicized.
- (e) In order to make the curriculum more meaningful the content should be made more culturally relevant (to the Indian situation), and alumni experience be used as a feedback loop.

Current and Future Career Opportunities Available to Child Development Graduates:

Specialists in Child Development and allied disciplines, as well as employed child development graduates were asked to express their opinions regarding the current and future job prospects in the field. The results of the survey indicated that Child Development graduates are and can be effective in the following :

- (i) as *University teachers* in post-graduate university departments and in affiliated junior colleges ;
- (ii) as *school teachers* at the secondary, primary, and pre-school settings;
- (iii) as *researchers* in research institutes, university departments, and in international, national, and state level welfare organizations.
- (iv) as *administrators/supervisors* in various settings/agencies working with planning, implementation, and monitoring of basic services for children and their families;
- (v) in *welfare settings* and in *development projects* as child welfare and probation/training/education officers at district and block levels; as extension workers in rural and tribal areas; in government departments; industries, and voluntary agencies;

- (vi) in *education, recreational, and institutional settings*, such as creche's and day care centres, toy libraries, hobby centers, children's section in libraries, and children's recreation centers; balbhavans or bhulka bhavans; as designers of children's playgrounds and play equipment; as hostel wardens in public schools, other recreational institutions, in juvenile courts; and as educational advisors/co-ordinators in non-formal education programs (for school dropouts and out-of-school youth) organized during vacations;
- (vii) as *trainers* of para-professional workers, of local field workers, of teachers and of villagers (or local community members); in various action programs related to community development;
- (viii) in *hospital settings* working with the handicapped and exceptional children, with the chronically ill; in prenatal and well-baby clinics; in pediatric wards; in mental health and other clinical settings (such as child guidance clinics); and in public health services;
- (ix) as *counsellors* in public/municipal schools, in family and child welfare programs, in hospitals and foster homes, and with emotionally disturbed adolescents, as well as for newly married couples;
- (x) as *consultants* in toy making industries, in television and other mass media/communications (especially in programs for women and children); for engineers and architects (in town planning), planning buildings (especially high-rise apartment complexes) housing, institutions, playgrounds, creches, etc.; in schools (for mental testing and counselling), and in industries; other employment prospect included :
- (xi) as *authors/writers* developing Indian literature (especially children's books); designing books jackets for children's literature, and as *curators* (in children's section in the museum), as *entrepreneurs* manufacturing children's toys, clothes, foods, equipment;
- (xii) as *self-employment* prospects such as starting nursery schools, child guidance clinics, and centers for conducting workshops in creative drama, in mass communication, producing and directing films, scripting for television and radio programs, and in freelance journalism especially in women's magazine.

Implications for Social Policy : Implications for social policy that can be derived from the findings of the reported investigation are not far to seek. It is evident that child development in India has come of age and has established itself as a distinct and specialized area of study, whose possible contributions to health, education, and welfare programs, particularly pertaining to women and children is indisputable. Yet the paradox remains that due recognition from the powers that be, especially in the government, is slow in coming.

It is noteworthy that international organizations such as UNESCO, WHO, and UNICEF have been in recent years taking an active, interest in the activities of professional bodies in Child Development across the world, leading to involvement of and participation by child development experts in policy decisions and programs related to children. In our own setting UNICEF took the lead in inviting the Faculty of Home Science, at the M.S. University of Baroda, to accept the assignment of preparing a plan document for the Social Input Project for Area Development for Baroda District in Gujarat.

The optimal utilization of the expertise available in the area of Child Development for programs related to Family and Child Welfare involve specific social policy implications. These include :

- (i) documented official recognition of Child Development as an area of priority interest and mandatory involvement of experts in Child Development in all social policy decisions and in national and state level programs related to women and children;

- (ii) nomination of specialists in Child Development as mandatory in specially constituted cells for Child and Family Welfare programs in the Planning Commission, in Departments of Social Welfare/Social Defence, State Institute of Education, Indian Council of Medical Research, Children's Book Trust, Bal Bhavan and so on (The status and recognition accorded to Health and Nutrition have not permeated the area of Child Development though these cannot be viewed as independent of each other).
- (iii) designation of degrees in Child Development and Foods and Nutrition as preferred qualifications for higher cadre of workers (e.g. CDPOs) in projects such as ICDS...;
- (iv) official recognition of under-graduate diploma in Child Development and Post-graduate diploma in Early Childhood Education, and preferential selection of these diploma holders in programs of Child Welfare/Education.

With the explosion of knowledge regarding children and their environment, increasing sensitivity to the needs of children and the consequent dedication on the part of governments and other agencies concerned with the cause of the child, due recognition to the field of Child Development will be a step in the right direction.

Concluding Comments

In sum, the career opportunities available to Child Development graduates presents an encouraging picture. The optimistic note of an alumni, herself an active worker in the field, serve to reiterate the expressed opinion of many :

"I do believe Child Development graduates can, and should be everywhere, in Urban planning, Architecture and Building schemes, Ministry of Education, Planning Commission, on Advisory Boards at State and Local levels, in Child Guidance Clinics, in Children's Wards in Hospitals, in Rehabilitation Wards, in Law (dealing with child laws, marriage laws, inheritance laws)...we must encourage our graduates to break new grounds".

The range of career prospects in turn reflect the broadening goals and scope of Child Development in response to a variety of social and academic pressures seeking greater involvement of social scientists in general and specialists in Child Development in particular, to contribute their expertise and participate actively in intervention programs and social policy decisions to upgrade the quality of life of the disadvantaged sections of the society, particularly the most vulnerable group of women and children. For their development is our key concern and forms the subject area of our study.

Amita Verma
and
T.S. Saraswathi

OVERCROWDING IN UNIVERSITY AND COLLEGE HOSTELS

The expansion of Higher Education in our country has been spectacular since independence. The State Governments, the Central Government and the University Grants Commission have been spending enormous amounts on higher education. During the year 1981-82, the UGC's contribution alone came to the extent of Rs. 3,284.71 lakhs on higher education. Out of this amount, it could allocate only Rs. 161.58 lakhs for the construction of hostels in universities and colleges. But if higher education is to yield results, proportionate to the huge amounts invested on it, favourable living conditions should be available for the students staying in hostels. Due to overcrowding and congestion in the university and college hostels, the living conditions are poor which result in indiscipline and campus unrest in our universities.

In this paper, it is proposed to discuss the problem of overcrowding in the university hostels in the country with special reference to the universities in Andhra Pradesh. The following table shows the extent of expansion in higher education in the country since independence :

Table 1

<i>Year</i>	<i>Total No. of Universities</i>	<i>Total Enrolment</i>
1946-47	25	2,05,678
1980-81	123	27,52,431

It is evident from the above table that while the number of universities increased only five times the number of students enrolled increased almost fifteen times. Thus, the expansion of hostel facilities is not commensurate with the expansion of colleges and universities. The Education Commission (1948) said that 'the hostel is not simply a place to eat and sleep or even study though these are indispensable. Living in a hostel is an important part of education, it is a way of life and here students learn to live decently or indifferently or even in uncouth fashion.¹ It recommended that 'universities establish reasonable standards for hostels, residence and corporate activities as a condition of college affiliation that these standards be enforced and that no affiliation be granted in the future until standards have been met.²

At the end of the first plan period, with a total enrolment of 7,12,697 students, accommodation could be provided only for 15 per cent of the students in the hostels. It was estimated that to increase it to 20 per cent, additional accommodation of 14·3 lakh sq. ft., was required at a cost of Rs. 17·16 crores. But there was an outlay of only Rs. 5 crores was provided in the Second Plan, which does not touch even the fringe of the problem³.

In 1962, the UGC appointed a committee to consider not only the requirements of hostels and staff, but also the role that should be played by these halls of residence and the manner in which the hostels should be administered and staffed in order to fulfil their proper role. The Committee estimated that during the year 1962-63 the accommodation in hostels was available for only 18 per cent of the students. It also estimated that by the end of the fourth plan, 3·5 lakhs of additional seats had to be provided at a cost of Rs. 120 crores (Total cost @ Rs. 4000 per seat).⁴

During 1980-81, there were 4722 colleges with only 2935 hostels and 19 per cent of these hostels were attached to universities. Presently, we have accommodation only for 14 per cent of the students enrolled in higher education. The universities and colleges are at present using the existing facilities to accommodate more and more students by converting single rooms into double, double into triple and triple rooms to four or five seaters. This has resulted in overcrowding and deterioration of residential standards in hostels.

Various enquiries conducted after students' unrest have held that for improving discipline in higher educational institutions, the living conditions in hostels have to be considerably improved.

The President's Enquiry Committee on Banaras Hindu University (1958) found that the hostels are 'overcrowded—and this overcrowding has become so chronic that the teachers are unable to control the classes...⁵

The Aligarh Muslim University Enquiry Committee (1961) held that the University should take up the matter of construction of new halls of residence on the campus immediately.⁶ While giving evidence before the Barman Commission on Orissa Students Agitation, several witnesses pointed out that indiscipline is bound to continue until the problems

of better living conditions of the hostels are solved. One witness said, 'American Universities have been very successful also in utilising the hostels as centres for the development of student programmes and encouraging sound educational development'.⁷

The University Enquiry Commission (Bihar) also held that 'inadequate residential accommodation is one of the reasons for students' indiscipline'.⁸ The Banaras Hindu University Enquiry Committee (1969) also advocated for the improvement of living conditions in hostels to improve discipline in campuses.⁹

As early as 1960, the UGC realised that the provision of hostel facilities was an integral part of the education and also a measure to improve educational standards. Consequently there was a major policy shift in the UGC which started an elaborate programme for providing hostels to college and university students. During 1969-74, it helped to construct hostels for 12,559 students in 63 universities and for 15,312 students in 286 colleges and paid grants to the tune of Rs. 2.37 crores to universities and Rs. 2.47 crores to colleges.¹⁰ In 1973-74, of the total of 22,27,020 students enrolled in universities and colleges in the country, 3,30,667 (16.6 per cent) students were living in hostels. It means in terms of percentage hostel accommodation had increased just by 1.6 per cent, when compared to the position at the end of the First Plan. Besides, the allocation of funds for construction of hostels was cut down subsequently due to the temporary ban imposed by the Government of India on construction of buildings. The overcrowding became more acute due to the ever increasing enrolment of students and a reduction in the financial outlay on hostels by the UGC.

The UGC's assistance for construction of hostels has been on a sharing basis. The Commission provides 50 per cent in the case of men's hostels and 75 per cent in the case of women's hostels as matching grant. Even if the State Government were prepared to meet the balance, the resources of the Commission were limited because since 1973-74, the Government of India has included hostels among non-functional buildings and a temporary ban was imposed on construction of non-functional buildings including hostels.

The Vice-Chancellor's Conference 1975 requested the Government of India to remove the ban and treat the student residences as an essential component of higher education facilities. The impact of the ban was such that during 1976-78 only a sum of Rs. 80.39 lakhs was paid to universities and 64.76 lakhs to colleges for construction of hostels. The conference also recommended that the Universities/UGC should initiate action to make a close study of the living conditions in hostels and bring them to the notice of the State Governments and Universities and initiate urgent remedial measures. In pursuance of this recommendation, the Tata Institute of Social Sciences was asked by the UGC in February 1977, to conduct a survey on the living conditions of the students in University and College hostels. The Principal focus of the Report submitted in 1979 was on the provision of hostels and utilisation of facilities therein, like accommodation, mess, sanitation, etc. This is the only major and useful survey that has been made on the subject, in our country.¹¹ The survey brought to light several interesting facts concerning the living conditions of the hostels in India such as the following :

- (i) 78 per cent of the hostels now existing were reported to have been constructed during the period of 30 years after independence. The sixties reported the highest growth (37 per cent) ;
- (ii) In 14 per cent of the hostels in the country, the number of students admitted is greater than the number for which the hostels were built ;
- (iii) In medical college hostels and social sciences and humanities hostels the overcrowding is higher than other hostels ;
- (iv) Quite a few of the hostels in the country, either have no rules or the rules are violated as far as overcrowding is concerned ;
- (v) In some cases, the rooms are so congested that there is hardly any space to move around ;
- (vi) In some of the overcrowded hostels, the hostel had no fixed seating capacity, and the number of occupants allowed to occupy the available accommodation

was flexible and determined almost entirely on the basis of demand for accommodation, and

- (vii) Only 52 per cent of the hostels are in a position to accommodate the full complement of inmates.

Keeping in view the above facts concerning the problems of overcrowding and maintenance of discipline in the hostels, it is useful to analyse the problem in depth. The rooms in hostels are of four categories viz. : (a) single-seater rooms; (b) two-seater rooms; (c) three-seater rooms; and (d) dormitories for four to ten students in each.

According to the UGC standards, a student requires 80 sq. ft. in double seater rooms and 100 sq. ft. in single seater rooms. In case of three seater, the area prescribed is 70-75 sq. ft. The UGC Survey (1979) has reported that the following position in regard to the different types of rooms available in hostels throughout the country :

- (a) Single-seater 6 per cent
- (b) Double-seater 8 per cent
- (c) Triple-seater 10 per cent
- (d) Varying combinations of the above 27 per cent
- (e) Dormitories accommodating 4-10 students, 19 per cent
- (f) Varying combinations of the above 30 per cent.

The survey also reports that 53 per cent of the university hostels have exclusively single or double seater rooms and only 3 per cent are having dormitories where in four or more students are accommodated. Thus, the scope for converting single seaters into double, double into triple etc., is limited. On this issue the Education Commission (1948) says :

One or two students in a single room is the ideal arrangement with a common space for study if there are two...In some hostels, dormitories in which a dozen or more students sleep and use separate rooms during the day for study and other purposes, offer satisfactory living conditions.¹²

The Robbins Report of UK analyses this aspect of overcrowding and says—"...there are cases where three students share one study-bed rooms and in the absence of any kind of supervision, it can be said that the limit has already been passed..."¹³ Overcrowding in the hostel rooms will spoil the minds of the students and their attention is completely diverted from studies. Due to these ad hoc arrangements, hostels have become just places of residence. It was revealed in 1955 in a survey conducted on Calcutta hostels, that 'the inmates suffered from drabness, dirt, lack of ventilation, lack of sunlight or adequate light and worst of all unhygienic and pitifully inadequate sanitation'.¹⁴

The Burman Commission also held that : "...there should be better arrangements for proper housing of the students". The Commission found that 4 to 5 students were housed in one room which was formerly being used either as single seated or double seated rooms and felt that such congestion must be avoided.¹⁵

While creating insurmountable problems for the university administrators, the overcrowding in university and college hostels is largely responsible for contemporary students indiscipline in our centres of higher learning. Among the university functionaries the worst affected are the Hostel Wardens who have to allot rooms to a large number of students admitted, for whom there is no accommodation in fact. Consequently, they give admission and leave it to the senior students to accommodate the new-comers. When the new entrants approach the senior boarders for accommodation, it is given to them on the basis of political affiliations etc., and the troubles for the management start at this point.

The Committee of experts constituted by the UGC to consider the report of the Survey (1979) took all these aspects into consideration and made several useful recom-

mendations. On the basis of these recommendations, following norms were laid down by the UGC for reducing overcrowding in hostels :¹⁶

- (a) The students doing a part-time or full-time job while studying in the university shall not be provided accommodation in the hostels ;
- (b) Universities and colleges may fix some time limit, beyond which a student should not be allowed to reside in the hostel;
- (c) Students doing research may be allowed a maximum stay of 18 months in case of M.Phil. scholars and 4 years in case of Ph.D. scholars;
- (d) While admitting students to the hostels, priority be given to fresh students admitted to various courses;
- (e) No guest be allowed to stay in the night in the hostel rooms;
- (f) Construction of more than three seated rooms in the hostels be discouraged; and
- (g) In future, construction of dormitories should be encouraged in hostels, to reduce costs.

With a view to reducing the congestion and overcrowding in hostels, the above norms were communicated by the UGC to all the Universities and State Governments for implementation.

The Osmania University conducted a High Level Seminar, in May 1981 on "Management of University Hostels in Andhra Pradesh" at which the recommendations of the expert committee of UGC were thoroughly discussed. The main objective of the Seminar was to identify the problems arising from overcrowding in hostels and to find solutions for them. The discussions covered the various aspects of the problem of accommodating students in the university hostels in Andhra Pradesh which are found to be overcrowded.

The following tables show the extent of expansion in higher education in Andhra Pradesh and the accommodation in university hostels.

Table 2

<i>Year</i>	<i>Total No. of Universities</i>	<i>Total Enrolment</i>
1946-47	2	14,307
1980-81	7	1,65,037

From Table 3, it may be seen that the number of hostel admissions during 1980-81 in campus hostels has increased to 11,277 as against the available capacity of 7,539 seats. For accommodating the extra 3,738 students, the universities had no alternative but to convert single rooms into double rooms, double into triple etc. There are two special reasons for this increase in demand in Andhra Pradesh University. In the first place the percentage of students getting admission to various faculties from the mofusil areas has increased. The introduction of Entrance Examination in some universities for all the post-graduate and professional courses, and provision to write these tests in regional language media, have attracted students from mofusil area belonging mostly to weaker sections who are all in need of hostel accommodation on the campus. Secondly, till 1975, the benefit of residential scholarships was available only to SC/ST students. But now it has been extended to listed backward class (LBC) and Economically Poor Person (EPP) students. The State Government has stipulated that the students residing in hostels alone are eligible for residential scholarships. While a residential student gets Rs. 200 per month as scholarship, a non-residential student gets only Rs. 200 per annum. This vast difference

Table 3

ACCOMMODATION IN HOSTELS
(UNIVERSITY TEACHING DEPARTMENTS/UNIVERSITY COLLEGES)

<i>Name of the University</i>	<i>Capacity (1975-76)</i>	<i>Actual No. of students accommo- dated 1975-76</i>	<i>(1980-81)</i>	<i>Actual No. of students accommo- dated (1980-81)</i>
Osmania	1,179	1,179	1,608	2,458
Sri Venkateshwara	1,242	1,492	1,274	2,035
Kakatiya	148	250	272	479
Nagarjuna	—	—	240	585
Andhra	2,077	2,565	2,273	3,660
JNTU	705	879	1,044	1,302
APAU	470	462	670	618
Central University, Hyderabad	—	—	158	140
Total	5,821	6,827	7,539	11,277

between the rates payable to the two categories of students is largely responsible for more and more students demanding hostel accommodation.

The Osmania University seminar considered all these aspects and recommended to the Government and the universities to implement the guidelines issued by the UGC. The State Government, issued an order on the 8th September 1981 incorporating the UGC norms as guidelines for hostel admissions.¹⁷ Government also issued another order directing the universities and colleges not to admit into hostels students exceeding the actual number of available seats.¹⁸ In fact, the issue came up before the Supreme Court in a writ petition filed by a law student of Osmania University. The writ was dismissed on the commitment made by the university that the student would be accommodated in the ensuing vacancies on a priority basis. The university submitted to the Court that steps are being taken by it as well as by the State Government, rationalising the admission into hostels and thereby improving the living conditions of the residents and to create a healthy condition and conducive atmosphere for studies.¹⁹

Thus universities in Andhra Pradesh are making efforts to solve the problems relating to hostel accommodation. But all these measures may not meet the growing requirements and steps should also be taken to increase the number of seats by constructing more hostels. A.P. Universities require 4000 additional seats in hostels as at present, which number would increase in the years to come. Even if dormitory type of accommodation is to be provided, it requires the construction of 2·80 lakh sq. ft. of accommodation at a cost of Rs. 2·24 crores. The Government of Andhra Pradesh is liberal in giving residential scholarships to post-graduate and professional course students compared to others. It is spending Rs. 11 crores per annum on post-matric scholarships alone. A sum of Rs. 2 crores for the construction of dormitories may not be high for the Government. This should be spent during the sixth plan period (1980-85) by the State Government, for the construction of additional accommodation in campuses. To look for assistance only to UGC to solve this gigantic problem is not justified. Organisations like the HUDCO and LIC also should come forward and help in constructing additional hostel accommodation in view of the fact that a large number of students belonging to the weaker sections of the society are also in need of hostel accommodation.

The State Governments and the universities in the country should take steps to allocate funds for the construction of hostels. If the congestion is reduced, peace can be maintained in the hostels. Peace in the hostels will result in peace in the campus as the hostels very often prove to be the breeding grounds for indiscipline.

Among the short-term measures suggested by the Conference of Vice-Chancellors (1975) to alleviate the situation, the following are worth mentioning in this connection.²⁰

- (a) Cheaper lodging may be provided around the campus where students may be ensured of a decent environment but can make their own mess arrangements;
- (b) The experiments made in the Mysore University of encouraging each district to put up cottages for students may be tried out in other areas;
- (c) The State Governments may also consider requisitioning lodgings through ordinance or otherwise for use of students.

In Andhra Pradesh, universities have been making efforts to tackle the problem of overcrowding in hostels. The peaceful atmosphere prevailing in these universities is an indication for this effort. But much more need to be done to overcome the problem completely. The other States have to follow this policy and initiate immediate steps to expand the hostel facilities to arrest the unrest and indiscipline in campuses.

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INTERNATIONAL SYMPOSIUM ON PROBLEMS OF DEVELOPMENT OF UNDERPRIVILEGED COMMUNITIES IN THE THIRD WORLD COUNTRIES*

The Indian Anthropological Association (IAA) and the International Union of Anthropological and Ethnological Sciences (IUAES) jointly organised an International Symposium on 'Problems of Development of the Underprivileged Communities in the Third World Countries : SUNCOM-82'.

The main purpose of organising the Symposium was to discuss the problems, of Development of the Underprivileged and identify the role of the Social Scientists in it. Accordingly, the deliberations focused on various themes related to the definition of the underprivileged, identification of their problems, legal provisions for their protection, consequences of the exploitation of the underprivileged developmental strategies etc. It was hoped that discussions and interchange of experiences on these aspects would help to evolve programmes and policies which could be applied towards the amelioration of the underprivileged in different countries.

Basic Issues

The ten themes, identified initially were merged into eight basic issues of which were discussed in different business session. There were also two additional sessions, included later on, on the request of the participants as they were considered to be integral part of the main themes being discussed in the symposium. The following eight main sessions were organised during the Symposium :

- (1) Concept of the Underprivileged in the Trans-national context.
- (2) Underprivileged Communities in the contemporary Socio-Economic Context.
- (3) Constitutional/Statutory provisions for safeguarding the interests of the underprivileged.
- (4) Application of Anthropological and other Social Science knowledge to the development of the underprivileged.
- (5) Demographic trends and rise of ethnicity among the underprivileged.
- (6) Underprivileged Communities in the Third World in the Industrial millieu.
- (7) Health Status, Nutrition and Medical care among the underprivileged.
- (8) Development Strategies for the Underprivileged.

In addition to the above, two concurrent sessions were also added on the request of the participating delegates as these were thought to be integral part of the issues already taken up in the symposium. These were :

- (1) A special session on Africa as an extension of the discussion on 'Demographic Trends and rise of Ethnicity among the underprivileged'.
- (2) Role of the Voluntary agencies in the Development of the Underprivileged.

Prof. L.P. Vidyarthi, in his presidential address, emphasized the need for policy oriented research. He was of the opinion that somewhere, something had gone wrong towards the development of the underprivileged. The theories in this field as evolved and sought to be applied, needed a thorough scrutiny as none of them could be blindly followed without assessing their efficacy or applicability in the local situation. Prof. G.K. Nukunya, from Nigeria greeted the participants and the organisers of the symposium on behalf of the people of Africa. He stressed the need to visualise the needs of development of the underprivileged communities world over in total perspective. These were, more or less, similar

*Brief Report of the Seminar held in New Delhi from October 2-8, 1982 and Organised by: Indian Anthropological Association (IAA) and International Union of Anthropological and Ethnological Sciences (IUAES).

to each other in nature and intensity. Therefore, while dealing with the problems of development of the underprivileged, the point had to be realised that fundamentally they were the same and, therefore, there was a need to have a global perspective. The session ended with a vote of thanks.

The need for cheap publications was also emphasized in the symposium so that the masses could have access to them. If the literature is published in a language which people can not understand and at a price which they can not afford, it would remain confined to a selected few. The folk media with their oral traditions scored over the print media in this respect, as they were cheap, disseminated knowledge through the inter-personal communication and were, by and large, culturally compatible.

The main recommendations emerging out of different business sessions are summarised below :

(1) *Underprivileged* is a condition of economic deprivation social, discrimination and political non-participation in the national decision making. The criteria for identifying the underprivileged needed to be reviewed to keep up with the dynamics of the changing situations as also to assess their universal applicability. Some concepts and definitions formulated during the colonial rule also required redefinitions as they were reflective of particular attitudes towards the natives.

(2) There should be indigenous models for identifying the underprivileged as also for their development. Neither the models evolved at one place could be applied in different situations nor the notions about the underprivileged in the developed societies could fit in the conceptual framework of the developing nations.

(3) Combined efforts of the Governments, voluntary organisations and the academicians, researchers etc., appropriate social legislations and the will to improve with in the community were essential for lifting the underprivileged above the poverty line.

(4) Social organisation, structure of values and economic organisation were positive inputs in the planning process and should be fully utilised for the amelioratory programmes for the underprivileged.

(5) Anthropologists should be involved in the developmental effort as they spent long time while working in the communities and understood the psyche of the people. Social Scientists should address themselves to the realities and act as catalysts of change.

(6) The underprivileged should be organised to take up developmental work themselves. This would help to generate a sense of participation amongst them.

(7) The objectives, goals and means of development should be relevant to the dynamics of changing societies. Greater action was called for bridging the gap between the declared policies and extent of their implementation. The constitutional provisions and the executive action had to go together.

(8) Protest or revolt by the underprivileged indicated awareness of their own deprivation and low level of technological development. This was also indicative of a desire to achieve higher levels in life. The main source of discontentment was inequitous distribution.

(9) There was greater need for applied research for development. This called for multi-disciplinary approach for research, monitoring or evaluation and also for taking corrective action. It was also necessary to evaluate the applicability and efficacy of the western models of development through pilot experiments before actually adopting them for extension. In this context, the need for regular interaction between the administrators, researchers and policy makers could hardly be over emphasized.

(10) It was necessary to assess the need, modalities and associated values of birth control from the point of view of the underprivileged.

(11) There should be integrated approach for basic health care, nutrition, immunisation and family planning. Adequate food supply, economic development and social development programmes should go together. Without this there could be no liberation from hunger or the disease or mal-nutrition. There was a basic need for identifying and evolving health-care strategies and nutritional strategies at the sub-regional level. Mobilisation of

local resources for such programmes as also to generate people's support and encourage their greater participation was a pre-condition for initiating social action, in this regard.

(12) There was a greater need for indepth research in the application of indigenous medicine systems for health care.

(13) The need for geographical and professional rehabilitation of those who find themselves displaced as a consequence of industrialisation could not be over emphasised. For this detailed guidelines and programmes were needed for hastening the process of integration.

(14) Enough data was available on different aspects of development of the underprivileged and their basic problems. Some how or the other, it could not be utilised for evolving policies or programmes. This was basically due to lack of communication between the administrators, academicians and the people. Lack of proper feedback from the field was the basic lacuna in our developmental programmes and policies.

(15) The educational system should be more relevant to the local needs. It should not be dependent on the printed word alone but should also be non-formal or linked with functional literacy.

(16) Specialised training of developmental administrators was needed so that the programmes could be related with the felt needs of the people and were not merely super-imposed.

(17) Role of women was not fully tapped in the developmental effort for the underprivileged. Conscious efforts should be made to mobilise them and for this it was necessary to launch special programmes and projects.

(18) The basic truth has to be realised that people have to develop themselves and technology only helped in it. The voluntary agencies had to play an important role in generating this feeling amongst the underprivileged and galvanising them into action. The voluntary agencies could be mobilised to take up this work with little support and develop it as a popular movement. They essentially played a complimentary role to the Governmental effort and were not its competitors.

All the participants were unanimously of the view that the International Symposium on Problems of Development of the Underprivileged should lead to similar efforts in future and should be regular activity. *Suncom* movement should not rest till the international community woke up to the needs of development of the underprivileged in the right perspective and initiated appropriate programmes for their amelioration. International peace could only be ensured with the underprivileged world over getting their long overdue share in the resources.

Valedictory Session

It was emphasized that development of the underprivileged required a multipronged approach for which a multi-disciplinary team of social scientists, administrators, politicians and other professionals was needed. The social scientists could provide the deep insights into the fundamental problems of the underprivileged but the implementation of plans needed support of others. Deprivation as a phenomenon was existent both in the affluent and poorer countries. Tradition bound societies would have to adopt modern ways of life if they wanted to rise to the level of the advanced and modern societies. People could not be expected to follow their old ways of life and yet think of competing with the modernised communities in terms of progress.

Sunil Misra

DETERMINANTS OF LEVELS OF HIGHER EDUCATION IN STATES

India has made spectacular progress in the field of Higher Education during the last three decades. However, the level of development of Higher Education has not been uniform with in the country because of a number of Socio-Economic and Political factors. For

example some of the States/Union Territories such as Delhi, Chandigarh, Gujarat, Haryana, Maharashtra, Punjab, West Bengal, Pondicherry and U.P. depict a much better picture when we compare the levels of Higher Education in these States to those of Bihar, Orissa, Andhra Pradesh, Assam and Himachal Pradesh. An attempt has been made in this paper to analyse the State-wise position and to identify the variables-Socio-Economic and Political which are responsible to the development of Higher Education in a particular State. A popular and common belief that literacy alone is responsible for the level of Higher Education in a State has been disproved as compared to other important variables. In the above context, the National Policy on Education 1968 laid down by the Ministry of Education to reduce the regional imbalances in the provision Educational facilities is worth mentioning. Thus there is an urgent need to identify the most important variables which affect the level of Higher Education in a State so that the planning of Higher Education could be made more effective and to meet the main objective i.e. to reduce the regional disparities in Higher Education.

The term Higher Education (as defined for this particular study) implies the education imparted after the school education stage. It includes pre-degree, degree, Post-graduate and research courses. However in case of U.P. since the number of students studying in intermediate courses is very very large the same have not been included under Higher Education for the purpose of the study.

Data Used and its Limitations

Data on the various variables-number of institutions, enrolment and related indices is based on the Ministry of Education's annual publication "Education in India, 1976-77". Data on budgeted expenditure on higher education has been taken from the Ministry of Education's annual publication "Expenditure on Education as shown in Central and States annual Budgets.

Data on population in the age-group 17-22 is based on the population estimates supplied by the Registrar General's Office. Data on literacy, urbanisation, sex ratio, SC/ST population, and population aged 35+ who are matriculates and above have been taken from the following Publications.

(a) Census of India 1971—General Population Tables Part II-A.

(b) Census of India, 1971—Socio-Economic and Cultural Tables Part II-C.

The complete data in respect of different variables used in the study is given in Table 1.

The data suffers from the fact that the reference year for the population and other socio-economic data relates to 1971 whereas the educational data relates to the year 1976-77. However, this is not likely to effect the analysis significantly, as the total effect will be equally shared by all the States/Union Territories.

Table 2 pertains to the statistical information mean, S.D. and C.V. about the different variables used i.e. (Y, X_1, X_2 etc.). It may be observed that the co-efficient of variation in the case of Y, X_4, X_8 , & X_9 is high, indicating the inconsistency between the different observations for these variables. This inconsistency is due to the large variation from State to State and will not affect the analysis from any view point.

This study suffers from a number of limitations in the absence of adequate availability of data. This relates to the coverage of non-formal sector of education which covers the education being imparted by a large number of unrecognised institutions preparing students for appearing in examinations leading to a degree in Higher Education, correspondence courses run by a number of universities/Institutes in the country and several part time courses in vocational/technical courses like A.M.I.E., I.C.W.A., Secretariat Practice, Chartered and Cost Accountancy* etc. However, keeping in view the fact that the total contribution of the Non-formal sector still being low in comparison to the formal sector and expected to affect all the States/Union Territories equally this study does make valid analysis to identify the factors responsible for the development of Higher Education in a State.

Table 1

DATA USED IN RESPECT OF DIFFERENT VARIABLES FOR THE STUDY

S. No.	States	X1	X2	X3	X4	X5	X6
1.	Andhra Pradesh	28.25	977.00	19.32	2.57	18.39	10.60
2.	Assam	35.51	896.00	8.82	2.58	18.94	16.30
3.	Bihar	23.51	954.00	10.00	2.51	23.63	9.10
4.	Gujarat	42.00	934.00	28.08	3.84	21.15	21.10
5.	Haryana	29.74	867.00	17.66	3.08	18.89	14.20
6.	Himachal Pradesh	32.27	958.00	6.99	3.14	27.44	26.20
7.	Jammu & Kashmir	21.15	878.00	18.59	2.93	8.25	21.10
8.	Karnataka	35.92	957.00	24.31	4.03	15.49	15.10
9.	Kerala	69.15	1016.00	16.24	5.04	10.28	35.40
10.	Madhya Pradesh	26.16	941.00	16.29	2.08	37.37	11.40
11.	Maharashtra	44.94	930.00	31.17	4.44	13.92	25.30
12.	Manipur	38.30	980.00	13.19	3.19	32.70	27.80
13.	Meghalaya	37.66	942.00	14.55	4.28	80.81	25.10
14.	Nagaland	32.90	871.00	9.95	1.53	88.61	27.60
15.	Orissa	31.04	988.00	8.41	1.53	38.20	13.40
16.	Punjab	35.22	865.00	23.73	5.01	24.71	25.60
17.	Rajasthan	21.98	911.00	17.63	2.29	28.53	13.90
18.	Tamil Nadu	42.94	978.00	30.26	3.60	18.90	27.00
19.	Tripura	37.62	943.00	10.43	2.68	41.29	14.40
20.	Uttar Pradesh	24.49	879.00	14.02	2.82	21.84	17.10
21.	West Bengal	40.51	891.00	24.52	6.84	25.95	18.60
22.	Andaman & Nicobar Islands	50.46	644.00	22.77	6.00	15.52	26.90
23.	Arunachal Pradesh	14.09	861.00	3.70	1.22	79.02	3.90
24.	Chandigarh	70.56	749.00	90.55	34.01	11.30	30.90
25.	Delhi	64.62	801.00	89.70	23.47	15.60	58.30
26.	Goa, Daman & Diu	50.31	989.00	26.44	4.89	2.83	30.90
27.	Pondicherry	50.32	989.00	42.04	4.07	15.50	35.50

X1=Percentage of literates aged 15 and over in a State during

X2=Sex Ratio i.e. Number of females per thousands males.

X3=Percentage of urban population to total population according to 1971 census.

X4=Percentage of population in the age group 35+ who are matriculates and above.

X5=Percentage of Scheduled Castes and Scheduled Tribes population during 1971.

X6=Percentage of enrolment at the Secondary level to the population in the age group 14-17 years (or enrolment ratio at the Secondary stage.)

Table 1 (Contd.)

S. No.	States	X7	X8	X9	Y
1.	Andhra Pradesh	28·85	13496	56	2·77
2.	Assam	33·05	10888	40	2·05
3.	Bihar	13·92	13334	32	1·88
4.	Gujarat	33·13	9658	36	5·11
5.	Haryana	23·66	6585	34	5·18
6.	Himachal Pradesh	23·93	7119	63	2·64
7.	Jammu and Kashmir	25·43	10088	161	3·39
8.	Karnataka	32·63	6647	60	4·57
9.	Kerala	47·34	11174	73	3·19
10.	Madhya Pradesh	24·14	10884	30	3·98
11.	Maharashtra	30·44	6893	47	5·41
12.	Manipur	33·75	2925	74	4·47
13.	Meghalaya	40·54	7215	74	3·38
14.	Nagaland	35·71	7910	48	1·13
15.	Orissa	22·10	14712	34	1·82
16.	Punjab	35·27	7069	50	5·88
17.	Rajasthan	17·29	1393	34	3·37
18.	Tamil Nadu	33·45	12854	43	3·62
19.	Tripura	40·18	13375	46	2·98
20.	Uttar Pradesh	15·06	6148	29	4·13
21.	West Bengal	28·61	10466	46	7·32
22.	Andaman and Nicobar Islands	40·56	10350	55	2·82
23.	Arunachal Pradesh	17·93	6500	27	0·21
24.	Chandigarh	44·47	3011	648	32·86
25.	Delhi	40·36	6216	28	18·61
26.	Goa, Daman & Diu	41·36	4621	78	5·09
27.	Pondicherry	32·89	4321	1288	5·33

X7=Percentage of girls enrolment at Sec. stage (classes IX-XI/XII)

Average population being served by Hr. Edn. instt. in the State during 1977.

Total population of a State

X8=

Total number of Hr. Edn. institutions in the State/Union Territories.

Percapita budgeted expenditure on higher education in the State/Union Territories.

Total students enrolment in Hr. education courses $\times 100$

X9=

Total population in the age group 17-22 yrs.

Table 2
DEP.—INDEP. VARIABLE STATISTICS

<i>Variables</i>	<i>Mean</i>	<i>S.D</i>	<i>% Co-efficient of variation (C.V.)</i>
Y	5.2996	6.2861	118.61*
X ₁	38.2252	13.8972	36.36
X ₂	910.7036	80.1009	8.80
X ₃	23.6800	20.6317	87.13
X ₄	5.3222	6.9047	129.73*
X ₅	27.9518	21.3956	78.54
X ₆	22.3222	10.7359	48.10
X ₇	30.9648	8.9346	28.85
X ₈	10995.9257	11110.5117	101.04*
X ₉	77.1659	115.9270	150.23*

*Data not very consistent.

Another limitation of this study is that it does not take into account the inter-state migration of students for the purpose of getting Higher Education. However this factor also does not affect the over all position as the magnitude of inter State migration in India may be quite negligible when compared with the total enrolment in a State.

One of the important conclusions of this study is highlighting of the fact that the percentage of population aged 35+ who are matriculaies and above (X₄), level of urbanisation (X₃) and the per capita budget on Higher Education (X₉) are the most important variables which effect the level of Higher Education in a state. The conclusions made as a result of analysis from this study are given in the last section under the heading "conclusions and further Research".

Variables Used

In this particular study we have used one dependent variable (Educational output) and 9 independent variables (Social, Economic and Political inputs) explained as under :

Dependent Variable

The level of higher education, as measured by the enrolment ratio in the age-group 17-22 years of the population has been taken as the dependent variable. The enrolment ratio at higher education in a State/Union Territories (Y), is defined as under :

$$Y = \frac{\text{Total students enrolment in Hr. Education courses}}{\text{Total population in the age group 17-22 yrs.}} \times 100$$

Independent Variables

There could be a large number of independent variables which explain the level of variation explained in the dependent variable, but based on the author's experience as well

inadequate availability of information and the cost effectiveness, only the following independent variables have been considered.

A. Social Variables

- X_1 = Percentage of literates aged 15 and over in a State during 1971.
 X_2 = Sex Ratio i.e. Number of females per thousand males.
 X_4 = Percentage of population in the age group 35+ who are matriculates and above according to 1971 census.
 X_7 = Percentage of girls enrolment to total enrolment at secondary stage (classes IX-XI/XII).

B. Economic Variables

- X_3 = Percentage of urban population to total population according to 1971 census.
 X_6 = Percentage of enrolment at the Secondary level to the population in the age group 14-17 yrs. (or enrolment ratio at the Secondary stage).
 Average population being served by a Higher Education institutions in the State during 1977.
 X_8 = Total population of a State

Total number of Hr. Education institutions in the State/U.T.

- X_9 = Percapita budgeted expenditure on higher education in the State/U.T.

C. Political Variables

- X_5 = Percentage of Scheduled Castes and Scheduled Tribes population during 1971.

The variables considered measure the socio-economic and political behavior in a State which are likely to affect the level of Higher education in a State and are therefore considered important from the analysis view point. However all the variables considered are not likely to make the same significant contribution in explaining the level of higher education in a particular state, for the reason that there may be some interdependency between different independent variables.

Methodology

As a preliminary attempt, Multiple linear regression analysis has been attempted considering one dependent variables and nine independent variables. For this purpose, step-up multiple regression methodology has been applied using CYBER 170/720 computer system making use of international mathematical and statistical library package (IMSL): Due care has been taken regarding the fulfilment of the basic assumptions required for the multiple regression analysis.

Results of Multiple Regression Analysis

Table 3, gives the linear correlation matrix between different Dependent vs Independent as well as intra class linear correlation coefficient.

It may be observed from the above Table 3 that "Correlation between the variables (X_1 , X_3), (X_3 , X_4), (X_1 , X_4) and (X_1 , X_7) is very high. In other words this implies that literacy has high correlation with (i) the level of urbanisation (ii) percentage of population aged 35+ and above matriculates and above enrolment ratio at the secondary stage and (iii) percentage of girls enrolment to total enrolment at the secondary stage (classes X-XI/XII). It may be seen that the variable X_2 Sex ratio, X_5 , (% of SC/ST), (X_7 , X_8) does not have high correlation with either dependent or any of the other independent variables taken in the study.

Other variables for which the inter correlations are very high are (X_3 , X_4); (X_3 , X_6); (X_3 , X_9); X_4 , X_9); and (X_6 , X_7). The inclusion or deletion of the variable to be included

Table 3

LINEAR CORRELATION MATRIX

Indep. Variables									Dep. Variable
X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	Y
1.0000	-0.1808 1.0000	0.7145 -0.4094 1.0000	-0.6917 -0.5110 0.9225 1.0000	-0.4048 0.0043 -0.3880 -0.2735 1.0000	0.7948 -0.1794 0.6858 0.5698 -0.2654 1.0000	0.8288 -0.1467 0.4536 0.4587 -0.1244 0.6591 1.0000	-0.3839 -0.0589 -0.2976 -0.2180 0.4638 -0.4338 -0.3003 1.0000	0.4718 -0.3404 0.6224 0.7740 0.2194 0.2194 0.3500 0.1856 1.0000	0.6398 -0.4477 0.9115 0.9789 -0.3069 0.4982 0.3988 0.2771 0.8216 1.0000 Y

in the final Regression model will take care of the above obvious intra-class correlation coefficient.

Table 4. This table summarise the results of step-wise regression analysis for different regression functions using the linear multiple models, the coefficient of determination (R_2) have been given. The following results emerge from this table.

Table 4
REGRESSION ANALYSIS

S. No.	Regression Function	Regression Equation	Co-efficient of determination (R_2)	S.E. of residual
1.	$Y=f_n(X_4)$	$F=573.79$ $0.5564+0.8911X_4^* (t=1.72)$ ($t=23.95$)	0.9582	
2.	$Y=f_n(X_4, X_9)$	$F=368.43$ $0.4872+0.7787 \times 4^* +0.0086 \times 9^*$ (1.13) (14.94) (2.79)	0.9684	
3.	$Y=f_n(X_4, X_9, X_3)$	$F=272.26$ $0.0252+0.0548X_3^*+0.6036X_4^* +0.0108X_9^*$ (0.03) (1.87) (5.51) (3.41)	0.9726	
4.	$Y=f_n(X_4, X_9, X_3, X_6)$	$F=237.67^*$ $0.8024+0.0815X_3^*+0.6036X_4^* -0.0597X_6+0.0089X_9$ (0.7100) (3.72) (5.98) (2.16) (2.87)	0.9774	
5.	$Y=f_n(X_4, X_9, X_3, X_6, X_8)$	$F=248.64$ $2.0978+0.07404X_{33}+0.658X_4^* +0.0902X_6^*-0.00005 \times 8-0.0068 \times 9$ (2.0) (2.80) (7.26) (3.38) (2.75) (2.42)	0.9833	DW-test= 1.974 Chi sq.=3.3982
6.	$Y=f_n(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9)$	$F=9857$ $-1.4068-0.0079X_1+0.0040 \times 2, +0.0666X_3^*+0.7151X_4^*+0.0052X_5^* -0.0730X_6^*-0.0182X_7^*-0.0001X_8^*$ () $+0.0069 \times 9$	0.9857	0.946
7.	$Y=f_n(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9)$	$F=114.8975$ $-2.9790-0.0333X_1+0.0058X_2 +0.8853X_4^*-0.0152X_5-0.118X_6 -0.0092X_7+0.0069X_9$ (1.046) (1.6763) (1.9212) (10.684) (1.2110) (0.9762) (0.1732) (1.953)	0.97692X8	

Value of 't' is significant at 5% level.

N.B. Figures in parenthesis indicate values of 't'.

(i) When Y is a function of only one variables i.e. X_4 .

In this case, the value of R^2 is found to be 0.9582 which implies that only one single factor can explain a large variation. The variable X_4 is actually a rough indicator of the educational levels of the parents who take decision to send their children for higher education. This is due to the fact that educated parents have got high aspirations for sending their children for higher education. This is a fact in Indian Society where the children get their education mostly according to the wishes of their parents.

(ii) When ' Y ' is a function of two variables only viz. X_4 and X_9 .

In this case we find the value of R^2 further increases to 0.9684 which is quite high. The values of t & F are also highly significant even at 1% level which implies that both these variables i.e. percentage of population aged 35+ who are matriculates and above and the per capita budgeted expenditure on higher education are the two most important variables which determine the level of higher education in a state.

(iii) When Y is a function of 3 variables viz. X_4 , X_9 , and X_3 .

In this case the value of R^2 has further increased to 0.9726. The values of t & F are also highly significant even at 1% level., which implies that the level of higher education can be very well predicted using the following three variables.

- (a) Percentage of population age 35+ who are matriculates and above.
- (b) Per capita budgeted expenditure on higher education and
- (c) Level of urbanisation in State.

(IV) When Y is a function of 5 variables.

In this case too, the value of R^2 further increase to 0.9774. The values of ' t ' and ' F ' are found to be highly significant. It may be observed that the sign of X_6 rective which implies that the level of higher education is expected to be high if the percentage of SC/ST population in a State is low or the vice-versa. This is possibility due to the fact that the population in the relevant age group (17-22) yrs) of these communities are not fully utilizing the existing facilities of Higher Education inspite of the fact that a number of incentives for getting Higher Education have been provided for them by the Government since independence, one of the reasons for this may be due to the social rigidness, fulfilment of immediate basic needs, early marriage both among Males and Females etc. From this one may conclude that the education of SC/ST needs better attention at higher level also.

(V) When Y is a function of 5 variables viz. X_4 , X_9 , X_3 , X_6 , X_8 .

It may be seen that the value of R^2 is very high. The values of ' t ' and ' f ' are highly significant even at 1% level. The regression coefficients of all the dependents variables are also significant. The values of regression coefficients for X_8 is negative which implies that the level of higher education in State also depend upon the average number of higher education institutions for a given population i.e. physical facilities available for higher education in the State. Thus it may be seen that U.P., Punjab and Haryana have got much better facilities in higher education as compared to the other States and the level of higher education in these States is comparatively of a higher magnitude when compared to the other states.

(vi) When Y is a function of 7 variables viz. X_1 , X_2 , X_4 , X_5 , X_6 , X_7 and X_9 .

In this case the value of $R^2=0.9769$. The value of ' t ' for X_4 and F are highly significant at 1% level. This implies that by adding variables X_2 , X_6 and X_7 here the variation among different States is better explained using these 7 dependent variables.

Table 5
ANALYSIS OF VARIANCE

Source of Variation	Degrees of Freedom	Sums of Squares	Mean Squares	F-Value	P (Exceeding F under HO)
Regression	9	1051.70263	116.85885	130.52171*	.00000
Residual	17	18.22007	.89530		
TOTAL	26	1066.92270			

REGRESSION COEFFICIENT**

Variable Number	Mean	Regression Coefficient	Lower Confidence Limit	Upper Confidence Limit	Standard Error	Adjusted Sums of Squares	Partial F-Test Value	't' Values	P (Exceeding F under HO)
1. (X ₁)	38.2085	-.0079	-.0804	.0647	.0417	.0318	.0355	.1884	.8527
2. (X ₂)	910.7037	.0040	-.0010	.0891	.0029	1.7280	1.9301	1.389	.1827
3. (X ₃)	23.6800	.0666	.0143	.1190	.0301	.2883	4.9015	2.213	.0408*
4. (X ₄)	5.3211	.7151	.5237	.2064	.1100	37.0338	4.2883	6.500	.0000
5. (X ₅)	27.9652	.0052	-.0163	.0263	.0122	.1613	.1801	.4243	.6766
6. (X ₆)	22.3222	-.0730	-.1373	.0027	.0370	3.4915	3.4915	1.974	.0648
7. (X ₇)	30.8648	-.0182	-.0954	.0580	.0444	.1513	.1690	.4110	.06861
8. (X ₈)	10531.5556	-.0001	-.0001	-.0000	.0000	5.4994	6.1325	2.476	.0241*
9. (X ₉)	77.1659	.0068	.0016	.0122	.0030	4.5378	5.0685	2.251	.0379*
10. (Inter-rept)	.2996	-1.4068	-6.1850	3.3714	2.7467	0.0000	0.0000	.71566	0.0000

* Significant at 5% level of significance.

98.573, Co-efficient of Determination (R²) = 98.573

00.946, S.E. of the residual = 0.946

17.834, S.E. as % of response mean = 17.834

Final Multiple Regression Equation,

$$Y = 1.4058 - 0.0079 X_1 + 0.0040 X_2 + 0.0663 X_3 + 0.7161 X_4 + 0.0052 X_5 - 0.0730 X_6 - 0.0182 X_7 - 0.0001 X_8 \pm 0.0069 X_9$$

(vii) When Y is a function of all the dependent variables $X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8$ and X_9 .

The value of R^2 in this case is found to be 0.9857 which indicates that more than 98.5% variation in determining the level of higher education is explained by this model. The regression coefficient as well as the level at which these are significant are given in Table 5. The regression coefficients for X_1, X_6 , and X_7 are very near to zero and are not significant at 5% level.

Validity of the Model

To test the validity of the model, we have found out the value of the variable :

$$Z = \frac{Y - \bar{Y}}{s.d(Y)}$$

It is found that the value of Z lies between -1.96 and 1.96 in respect of all the States/Union Territories except Delhi. This proves the validity of the study as the number of observations lying outside -1.96 and 1.96 being only one (less than 5%).

Conclusions and Further Research

The following important conclusion emerge from the above analysis:

- (i) The level of higher education in a State is mostly dependent upon the percentage of educated population (matriculates and above) in the age-group 35+ which measures the educational level of the parents. It may also be concluded that educated parents have got higher aspiration towards their children to go for higher education.
- (ii) The level of higher education also depends on the level of urbanization which implies that development of higher education will depend upon the future growth of urbanisation in the country to a large extent. This is particularly so in the Indian society as the number of students willing to migrate from rural to urban centres for higher education is not very high which may be due to the high cost of migration for the purpose of Higher Education.
- (iii) One of the important factor which affects the level of higher education in a State is the physical facilities for higher education i.e. the number of colleges and other higher education institutions available for the given population. With the increase in the number of higher education institutions available in a State, the level of higher education is expected to increase.
- (iv) Another important factor which influence the level of higher education in the State is the priority given to the higher education programme in the State as measured by the per capita budgeted expenditure on higher education.

Problems for further Research : The above mentioned analysis is limited to higher education sector alone, further research is needed to identify the socio-economic and political factors affecting the levels of primary education in different States of the country. This is particularly so as we have not yet been able to achieve the goal of universalisation of elementary education in our country. This study is also being undertaken by the authors of these papers.

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S.C. Seddey and Ravi Kant Gupta

Book Reviews

Higher Education in the Third World : Themes and Variations by Philip G. Altbach
Pp. 28, *Maruzen Asia (P) Ltd., Singapore*, 1982, Price not stated.

No. 1

Philip G. Altbach is one of those few American scholars who in the course of their professional career have looked beyond the borders of their own country. Going by the book in hand he gives evidence of having first-hand knowledge about India, Singapore, Malaysia, Kuwait, Japan and quite a few other developing countries. It is important to call attention to this aspect of Altbach's work while reviewing this book.

When one comes to think of it, it is astonishing that so far very little attention has been given to Higher Education in the Third World. The Third World is not one unified concept. It includes countries in three continents—Asia, Africa and Latin America. In terms of numbers, their number would come to about a hundred. Whatever be the other variations, as noted by the author, they share the following three characteristics :

- (1) The Third World academic systems serve a small proportion of the relevant

age group. Whereas in countries like the U.S. more than one-third have access to higher education, in these countries the percentage of the relevant age group which goes to college is hardly 1 % or 2 %.

- (2) Largely because of historical reasons, each one of these countries is linked with one of the major academic systems in the developed world. The three countries which exercise the largest measure of influence in this regard are Britain, the United States and France. Consequently, the advanced countries being the intellectual 'centre' and the other hundred countries being on the 'periphery' is a concept which is very much applicable to their respective situations.
- (3) In most of these Third World countries, except perhaps Latin America, the key medium of instruction in higher education is by and large a European language which was popular in that particular country before the period of de-colonisation.

There three characteristics are so marked that they set these hundred odd countries apart from all others. These are countries in Europe for instance which are not substantial in size and yet at the same time they

cannot be described as peripheral to the 'centre'. Belgium is one example. Another example can be Czechoslovakia.

CENTRE AND PERIPHERY

The key concept in this entire discussion is the concept of the Centre and the Periphery. A separate chapter is devoted to this theme wherein it is brought out clearly that knowledge is produced mostly in these advanced countries and then exported to the Third World through books and journals. Quite logically, one of the sub-themes of the book is the Distribution of knowledge wherein the whole gamut of issues dealing with scholarly publishing in the Third World as well as the channels of communication are considered in depth. This is the strongest part of book and deserves to be read with care.

What is stated is not all that new or earth-shaking but the very fact that it is stated in some detail and forms of core of the argument by a scholar who is based in one of the American universities is significant by itself. Most scholars in the developed world are so self-centred that as far as they are concerned the rest of the world exists mainly for their sake. In their world view the centre of the stage is occupied by their country or by a few other developed countries. Altbach's book provides a refreshing contrast to this approach and is to be welcomed from that point of view also.

An important question to ask here is why no one in the Third World has yet taken initiative to even convene a seminar to discuss these problems. The answer, sad to say, is the very issue about which the book is written. In each of the Third World countries, the university is one of the peripheral activities and seldom at the centre of things. Altabach has dwelt on it with great insight and eloquence but there is one dimension missing from his analysis.

WHY PERIPHERAL

How is it that despite more than a century in countries like India the university still continues to be on the periphery? One important reason for it is the fact that

in developed countries literacy has been a universal phenomenon for almost a century. In most of these countries everyone goes to school till the age of 15-16. It is only after that that one reaches the stage of higher education. Not only that, in addition to the school system which covers the entire population, there is the whole infrastructure of bookshops, public libraries, magazines, journals, the daily press and now of late the ever present media.

Each one of them is an educative force and each one of them moulds the thinking of children as they get shaped into citizens. For some years now the media has been blamed for playing not exactly a constructive role. That controversy apart, the fact remains that there is hardly any gap between the town and the country and whatever be the differences of class the educational system covers each and every child. It might have been helpful if the author had also probed this aspect of the problem in some depth.

The fact however remains that Altbach has uncovered a new set of problems which require intensive and detailed discussion. He also has a separate section dealing with Teachers and Students and the crucial role of the professionate. In particular, he dwells upon the attitude of servitude which most professors in the Third World display. In their professional outlook as well as conduct they underline the point that they belong to a university system which is on the 'periphery' and not at the 'centre' of things. This is what calls for some heart-searching on the part of those who not only are victims of the system but also choose to perpetuate the psychology of being victims.

Amrik Singh

No. 2

Those who are familiar with Philip Altbach's work on publishing in India, student unrest, and textbook aid will find this collection of papers somewhat disappointing. For one thing, a collection of independently written papers rarely makes a book, and this collection does not illustrate that rare possibility. Countless ideas, examples, and sometimes parts of sentences have been

repeated many times over throughout the book. Repeated overlapping destroys the classification of themes under which the papers have been arranged. Such problems of presentation, although not easy to dismiss, need not detract from one's appreciation of Altbach's point of view. The one good thing this collection does is to offer an opportunity for getting an overview of a prolific writer's recent work.

The central theme of Altbach's interest in higher education in the Third World is the continuation of colonial legacies. No Third World country, he says, has made a clear departure from the model of university education which evolved during the days of colonial rule. It is easy to notice the persistence of colonial traditions in institutional administration, structure and content of the curriculum, medium of instruction, student-teacher relations, and the examination system. Budgets of higher education have been growing, and new institutions have constantly been set up, but the basic structure of academic institutions has remained untouched. Altbach hopes that the advanced developing countries, such as the oil rich countries of the Middle East, Republic of Korea and Taiwan, will be able to evolve a non-colonial model of university education. But are these not the countries worst affected by neo-colonial patterns of control? Altbach believes that their relative economic prosperity has given them a good chance to start building structures of higher education in an original and planned manner.

Throughout the Third World today, Altbach acknowledges, higher education has an 'elite' character. The curricula and institutional norms reflect the elite character of the clientele of colleges and universities which come largely from the upper levels of society. The pace of growth many Third World countries have attained in the matter of starting new institutions might give one the impression that higher education is now available to a larger section of society. Altbach reminds us that in all African, Asian, and Latin American countries less than 5 per cent of the relevant age group of the population is attending post-secondary institutions. In India, less than 2 per cent of the relevant age group of the population is in post-secondary institutions. The

Indian experience has been that increase in funds for higher education is made at the cost of primary education. The imbalance between resources allocated for school and for higher education is greater in the poor than the rich countries, and greatest in the least educationally developed areas of the poor countries. Bihar and Uttar Pradesh are telling examples of this phenomenon in India. The contradiction is obvious: spending of more money on higher education, apparently to expand it, will make it more elite, for the extra money will undercut the much-needed growth of primary education. Only a change in political choices can resolve this contradiction, and such a change cannot be purchased with oil money or foreign investment.

While the colonial model of the university persists, structures of neo-colonial relationship between the rich and the poor countries have emerged. Altbach discusses some of these structures under the theme of 'distribution of knowledge'. "The basic reality", he says, "is that virtually all Third World universities are at the periphery of an international knowledge system which is dominated by the major industrialized nations." Academic publishing and research offer ample evidence of the truth of Altbach's thesis. In the matter of knowledge requirements, the dependence of Third World countries on First World sources extends to knowledge about themselves and other Third World countries. A large number of academic writers of the Third World continue to prefer publishing their research in Western journals. In this context, Altbach's own choices do not offer a healthy exception. None of the papers included in this volume first appeared in a Third World journal. His footnotes rarely refer to writings and research done by Third World scholars and published in Third World journals or magazines. Certainly one cannot discredit Altbach for not practising his own precept; his conformity to the pattern he criticises merely shows how powerful the pattern is—so powerful that even those who know it well fail to depart from it.

The main attraction of Altbach's criticism of colonial traditions and policies is its friendliness. He uses radical terms such as 'centre' and 'periphery' to identify colo-

nial relationships, but he does not probe colonial and neo-colonial structures with the help of this terminology to the disturbing depths of economic and cultural oppression. It seems that in Altbach's usage the terms 'centre' and 'periphery' have little more than geographical value. He certainly does not allow us to see a conflict of interests between those who rule from the centre and those who comply in the peripheries. Altbach's commentary on neo-colonial structures of domination stops being interesting when he starts to take motives into account. For instance, he dismisses the detrimental effect of American textbook aid on indigenous publishing in Third World countries by calling such effect 'unintended'. It would be nice to use this method of dismissal on the more dire effects on Third World's humanity of America's aid in areas such as war equipment and medical research.

Krishna Kumar

Technological and Social Complexity. By Maurice N. Richter, Jr. State University of New York Press, Albany, 1982. pp. X+120. Price : \$ 10.95 paper, \$ 34.50 Cloth.

The book under review is concerned with contemporary problems of social and material technology, though the author has successfully brought in history and anthropology to strengthen and elucidate his arguments. I found the book very interesting not for the overall theme or argument of the book, but for the definitional clarity that the author continuously engages in right through his work. In addition to the attention the author pays towards defining terms like technology—both organizational and material, rituals, science, and stages of social development, he also examines in detail the veracity of some statements which are accepted almost uncritically and axiomatically. For instance he takes up for serious questioning the accepted notion that modern warfare is far more destructive of human life, or the belief that the cost of medicine is far greater now than it has ever been. On both these counts he points out the unexamined areas which had so far been quite calmly ignored. He also questions another anthropological truism which states

that the primitive man is more concerned with nature than the modern man, and that he is far more committed towards the preservation of nature than his modern counterpart is. On all these points I found his work to be very profitable and provocative.

His comments on the impact of technology in pre modern societies does not however have the same degree of persuasiveness, and like the major part of his book, it is made up of a series of points, not fully co-ordinated, nor in any sense novel or inspiring. His observations on China's technological style are also quite flat and impressionistic and do not possess the sharpness or the acuity he displays while refining definitions or burying old truths. The most significant comment he makes on China is that with Mao Zedong's cultural revolution, technology as such was not being given up, only that material technology was being substituted by organizational technology. One only wishes he had used his definitions on the varieties of technology to study the complexities between these two forms of technology in a society whose basis is a self-conscious social technology.

As has been mentioned earlier there is no single theme, or a group of related themes, that lend coherence to this work. It is made up of observations, which by themselves are not without interest, but they make no impact beyond the sentences to which they are limited. He has raised issues like the variegated responses to scientific inventions and their technological follow throughs in different societies in history, without further enlightening us on the subject. He talks of the great developments in science in the ancient world and of their long periods of stagnation after which the modern western world took over, again without helping us, however minutely, towards understanding this great historical puzzle. I have one last complaint to make of this book in this short review. Richter has not examined the specificities of medical science and technology where demonstrable "means-ends" rationality does not generally hold, and yet medical technology is not quite like magic. I think the author should have paid more attention to the peculiar characteristics of medicine, and to the fact that the

stated ends in medicine are unlike other material technologies in so much as medicine does not primarily aim to alter the *status quo* but to bring the system to *status quo ante*.

Finally, I must repeat that for the definitional clarities alone this book is more than worthwhile. I have almost immediately benefitted from many of them. One hopes that in future the author will be able to bring his precision over terms to greater use in this field of science, society and technology.

Dipankar Gupta

Culture, Politics and Critical Academics by Asoke Basu. Archana Publications, Pp. 106. Rs. 50.

If somebody says that 'civilization has inexorably linked higher education and "academe" as a major source of institutional authority' as Professor Asoke Basu has done in the opening sentence of his book, *Culture, Politics and Critical Academics*, one will choose to start one's analysis at a superficial or a mystifying phenomenal level in the first place and would wrongly consider the system that legitimizes the institutional authority as the source of such authority. Anyone desirous of concrete and specific analysis at a deeper level underlying the former must start with the production and reproduction of human life, its survival and enrichment. Because, if men are to live, they must have food, shelter and clothing, which again, must be produced by men collectively by entering into relations with one another. But they cannot produce without acquiring certain skills and knowledge in respect of nature as well as in respect of the social world developed out of the social relations of men. It is with the development of social division of labour, functional differentiation and the increasing complexity of such knowledge that the "academe" came into existence to cater higher education. These academics having evolved one of the development of social division of labour required by the mode of production, had been helping the reproduction of the conditions of production not only by disseminating

the knowledge of the material and social world but also by inculcating certain values that legitimize the institutional authority required by the mode of production.¹

So the "academe" is not the source of institutional authority, or the State or legal system, it only plays as the second fiddle by legitimizing the latter. Despite the partial or relative autonomy enjoyed by the academy of higher education, it cannot be ignored that it has originated to meet some need of the social system based on the mode of production. And it was more or less in the past and is, at present, dependent on the patronizing institutional authority for its financial and legal support. But his (author's) own citation from Kamen (p. 2) asserting that the principal aim of the colleges in 1636 was more political than spiritual because most of the colleges (under church) were training for the royal services also subscribes to the above view. Although the author, in the opinion of Asok Mitra, who wrote the Foreword of the book, 'speaks almost wholly through the mouths of other author's (p. ix) he has to make such observation as 'the educators in the universities were called upon to train students in the maintenance and continuance of public structures.' (p. 3) If this is so, then this observation appears to go against the contention of the opening sentence noted above.

Again, adversary culture of all sorts—that is, that which supports feudal structure and values against the post-feudal ones and that which supports capitalist structure and values against the socialist ones cannot be put together and equated (pp. 3-6) because 'the Radical of today is the Conservative of tomorrow' as has been rightly observed by the foreword-writer (p. xi). These are, however, the main issues that comprise the first chapter of the book.

In the opinion of the author, this 'critical role of the politics of academics' (p. 10) may be either of two types, either integrative or oppositionist depending on the occurrence of the fusion between intellectuals and the functionaries of bureaucracy (p. 11). This view is difficult to

1. Louis Althusser, *Lenin and Philosophy and Other Essays*, Monthly Review Press, New York, 1971 pp. 131-3, 143, 145, 152, 155-71.

accept because such roles depend on various factors such as socio-economic origin, class-position, class-identification and class-centric function. Again, the 'academics who are integrative' would 'tend to mirror the nation's political orientation'. (p. 11) is not understandable. They can, at least, reflect the political orientation of the dominant class in the specific society. Further, in the opinion of the author, 'three actors in the development of a nation state may be noted—intellectual, bureaucracy and public.' (p. 11) Amazingly enough, this appears to be the picture of a classless society with two dominant strata. As the author appears to be concerned with the analysis of western capitalist societies, he should not have omitted the existence of classes with unequal power-potential—the dominant role of the financially powerful corporate sector. The non-realist and non-Marxist orientation of the author might have prompted him to make as much simplification of the situation as the western scholars, who are reluctant to expose the exploitative aspect of such societies, do.

In the third chapter, having such heading as 'Politics of Academics—The Divided Liberals,' the author has found both the academia and the political authority mutually dependent upon each other and agrees with S.N. Eisenstadt in contending that both (that is, academic and political authority) attempt to maintain maximum autonomy and maximum control over the other. Thus 'this relationship produces a dialectical tension within the institution of academia' (p. 13). This dialectical tension, having been more acute because of the increasing dependence of the political authority on the academics or intellectuals for their services as advisers or experts on the one hand (p. 15) and the increasing dependence of the universities on the political authority for huge financial assistance for research and other activities (pp. 15–16) on the other, has, in the opinion of the author, made the academics more concerned about the applicability of liberalism in the universities and its decline and divided them (that is, the academics) on the meaning of liberalism (p. 16).

But the author has neither noticed nor traced the predominance of capitalist state

within the framework of such mutual dependence between academics and the political authority. How this predominance of the capitalist state, its role and penetration in the sphere of higher education operate may be seen from a rather longish quotation given below :

'The changes on which attention has been focused represent only a new and more direct form of capitalist relationship within the universities. The "traditional" structures of academic systems, which have been modified but not wholly superseded even in the United States, and are till only marginally altered elsewhere, represent forms of relationship which themselves reflect the insertion of the university in the capitalist system. And the social science, in which research remains subservient to the career structure of teaching—to a greater extent than in the natural sciences, are dominated by these forms of relationship.

'Education has not been, generally, a sphere in which surplus value is produced but one in which realized surplus value is consumed, generally under the aegis of the state. There are, of course, spheres of private education, including higher education, but historically these have tended to become of secondary importance in relation to state systems. The development of higher education does not, therefore, depend directly on the operation of the law of value, but on mediations of that law through the political processes of the state and of the higher educational institution itself. Though these means higher education is brought into relation with the capitalist economy.

'It is, however, true that within such general structures the "academic" process, as such, has typically an important degree of autonomy'.

'Unlike work which is produced under the direct aegis of a government agency or capitalist concern, it can claim a special degree of autonomy. It is subordinate only to a form of organization which claims to exist for the purposes of developing knowledge as such. But in fact that organization is a part of the organization of the capitalist university; its form of knowledge reproduces the reification produced by the capitalist

mode of production; its standards limit the scope and content of intellectual work in the interests of a hierarchical structure of authority and income.²

Without examining the autonomy of the quest for knowledge that Robert Nisbet sees as the core of 'academic dogma'³ the author has merrily juxtaposed opinions of various writers regarding the concept of liberty, equality, freedom and the rule of law to differentiate their real meaning from the misinterpretations against the backdrop of academic-state relationship in the last part of this chapter. As if the removal of misinterpretations of these ideas relating to liberalism or the reversal of the decline of liberalism itself may help the resortation or preservation of academic autonomy. But Martin Shaw (Ref: op. cit. chapters II and III) in simple, direct and forceful language has demonstrated how different theories of social sciences have developed to meet the requirement of capitalist industries; how state intervention in socio-economic fields to save capitalism has made the industries and different foundations finance researches in social work, sociology, planning and economic development specially in U.K.; how federal research and development expenditure in the U.S.A. delimited such areas in 1965 for research as space-technology, military science, medical science, nuclear physics, education, vocational rehabilitation and welfare administration and even the social basis of research-techniques. David Smith, in similar style of direct and non-terminological expression, pin-pointed the capitalists' representation in the management of overwhelming the American universities.⁴

In chapter IV on 'Politics of Academics—Social Basis,' the author has found the 'overall outlook of academics' to be 'left of the centre'. But, as the forward-writer has rightly observed, 'it may be meaningless

to speak in terms of center, left or right of center or radical and conservative, for these words will mean different things to different disciplines at different time-place situations.' (p. xi) How much leftist the left has been assumed to be may be ascertained from the observation that anti-Vietnam-war radicals did not have the goal of overthrowing capitalism in mind and, as such, when the draft ended before the war the anti-war movement died out. (p. 73) In the opinion of the author 'those with low socio-economic status are more likely to conform to the system's requirements and not question the legitimacy of the system'. (pp 73–74). If this is a fact and if '*faculty whose father has been employed in manual occupational rank tend to be left-of-the center*' (p. 43) [Italics in the original] then what leftism actually mean is anybody's guess.

In the last chapter, probably for its being a chapter on Conclusion, our author has made some concluding remarks some of which may be found to contradict each other. Academics are expected to be 'increasingly become closely tied to secular power' (p. 66) and carry on their function as servants of the established regime basing their authority on their ability to aid those who control the state. But how one can expect this if one finds the academics to be anti-establishmentarian seems to be a most question.

Secondly, the anti-establishment attitude against a left national establishment and the anti-establishment attitude against a conservative national establishment cannot be equated as has appeared to have been done (pp. 66-7).

Thirdly, what freedom of inquiry do the academics preserve when they accept financial assistance granted by the capitalist state or the capitalists themselves for carrying out research in such fields as are specified by the granting authorities has not been made clear enough. Again, how much independence do the academics maintain when they provide the core values of the society having become 'the agent of the order' (p. 68) is again a matter of enquiry. Actually such apparent independence might have been provided by the dominant but dormant structure (mode of production) of social formation in its own

2. Martin Shaw, *Marxism and Social Science*, Pluto Press, 1977, pp. 48, 49 and 54.

3. *The Degradation of the Academic Dogma: The University of America, 1945–1970*, London, 1971.

4. David N. Smith, *Who Rules The Universities?*, Monthly Review Press, New York, 1974.

interest as has been explicated by Louis Althusser following Marx's analysis in *Grundrisse*. The myth of academic autonomy, in fact, has been created to elude people by making them believe in such autonomy and remain satisfied on the one hand and to help the reproduction of the mode of production with certain values associated with it on the other.

Fourthly, while the author has approvingly cited the observation of Everett Ladd Jr. where the latter considers the intelligentsia "the pro-government class of contemporary America. Large segments of the college educated, professional stratum—people in research and development, in education, in public bureaucracies, and the like—are directly dependent upon government for their income and for the support of their professions and institutions" and himself observed 'that welfare state liberals have become etatist and selectively polemical' and 'academics who propose egalitarian solutions find remedy with the state' (p. 78), has opined, thereafter, that the 'intellectual freedom is on the rise.' (p. 79) But his last noted opinion does not follow as conclusion from the citation and observations the author has made on the previous page unless he is prepared to define freedom as subservience.

In the concluding part of this chapter the author has observed that 'with the

rapid growth of knowledge...their neighbouring communities—business, government, religion, media, and others—need academics more so than before...' (p. 79); that 'with the demand for policy formulations, these critical academics will form the fulcrum of this plurality—authority and order.' That this 'routinization of intellect's power...will be matched...by the academy's willingness to integrate the institutional source of authority (Academy) and the structure of order (State)'; and that such 'an integration is neither an apocalyptic vision of change nor the "surrender of values" (p. 80). But even if these values are not surrendered what purpose does these actually serve if these values are the values concerning the myth of academic autonomy ?

Despite the above observations it should, however, be admitted that the author has placed a problematic before the Indian scholars which has not been thoroughly dealt with so far. He has also surveyed the existing literature almost in its entirety--- 'almost' because he has omitted most of the marxist authors on this subject. If the marxist writers of our country take up the issues raised by the author and place their respective analysis the same will facilitate proper understanding of the issues involved.

Buddhadeva Bhattacharyya

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Our Contributors

Asa Briggs is an eminent British social historian who has served as member of the University Grants Committee and as Pro-Vice-Chancellor of the pioneering University of Sussex. He is currently Provost Worcester College Oxford and Chancellor of the Open University.

Amita Verma is currently Professor and Head of the Department of Child Development and Family Relationships and Dean of the Faculty of Home Science, M.S. University, Baroda. Her areas of specialisation are Early Childhood Education, Pre-school Teacher Education and Family Life Education. She is Member of ERIC, NCERT and the Elementary Teacher Education Committee of the NCTE. Holds membership of National and International professional organisations in Early Childhood Education, Home Economics and Teacher Training. She is author of a book titled *In favour of Children : An Agenda for Action* and numerous papers in reputed professional journals.

Amrik Singh was Secretary, Association of Indian Universities and has been Vice-Chancellor of Punjabi University, Patiala.

B.B. Chatterjee was from the Department of Psychology, Utkal University, Bhubaneswar. At present he is the Professor of Psychology at the North-Eastern Hill University, Mizoram.

Buddhadeva Bhattacharyya is Reader in the Department of Political Science, University of Calcutta, Calcutta. He is member of Calcutta University Council and Editor of *Society and Change*.

Christopher Orpen is from School of Management, Deakin University, Victoria, Australia.

Dipankar Gupta is working as an Assistant Professor at the Centre of Social Medicine and Community Health, Jawaharlal Nehru University, Delhi.

Dietrich Goldschmidt is Director em. at the Max Planck Institute for Human Development and Education, Berlin West, and Professor of Sociology at the Freie Universitat, Berlin West. His work is mainly in the field of research on higher education, comparative education and education in the Third World.

Dinesh Mohan holds the State Bank Chair for Biomedical and Rehabilitation Engineering at IIT, Delhi. His professional research includes bio-mechanics of trauma, accident research and rehabilitation of the handicapped. He has also published articles on science and technology policy in India.

G.W. Rama is an Argentine educationist who has served on the staff of the International Institute of Educational Planning at Paris in charge of major study of education and development in Latin America. He is currently Director, Education Economic and Social Commission for Latin America, Santiago (Chile).

J.K. Pillai is Professor and Head of the Department of Education, Madurai Kamraj University. She is currently working in the area of higher education guiding researches and conducting studies in instruction and evaluation at the collegiate level.

Krishna Kumar teaches at the Department of Education, Delhi University. He is the author of *Raj Samaj aur Shiksha* (Macmillan, 1978), and is currently working on a book on the political context of education in India.

M.V. Soundara Rajan is Reader in Commerce at Osmania University, Hyderabad. He was Chief Warden of Osmania University, member of UGC Experts Committee on Hostels. Also assisted the Government in solving hostel problems.

P.J. Gabriel is Professor of Botany, American College (an autonomous Institution) Madurai. He has few papers and publications to his credit. He is now in Nigeria working in the area of Biology Education.

M.A. Khader is from Zakir Hussain Centre for Educational Studies, S.S.S., Jawaharlal Nehru University, New Delhi.

R.C. Srivastava is on the faculty of the Department of Education (C.I.E.). University of Delhi. He is the author of six research oriented books and forty research papers and articles. Educational Administration and Teacher Education are his areas of work and study.

R.K. Samanta is at present Faculty Member, National Academy of Agricultural Research Management, Hyderabad. Has served B.C. Agricultural University, West Bengal and ICAR Research Complex, Shillong before. Teaches Communication and Transfer of Technology. Has published 36 research papers, 1 book and 7 bulletins and reports.

R.K. Gupta is working as Scientist at the Indian Institute of Petroleum, New Delhi. He has 13 years of wide experience in various research institutions including on various International sponsored projects. His current areas of interest includes applications of systems Dynamics, Simulation modelling and computer software development.

S.C. Seddey is presently working as Dy. Director (Statistics) in the Ministry of Education and Culture, has experience in the field of educational planning, statistics and regional planning, associated with a number of committees/working groups etc. relating to improvement of educational statistics system in India.

Sunil Misra is presently Director, Audience Research in All India Radio. He was the Executive Secretary of the international symposium on 'Problems of development of the underprivileged communities in the third world' (SUNCOM '82) held at Vigyan Bhawan in October 82.

S. Singhal is on regular Faculty of Zakir Hussain Centre for Educational Studies, School of Social Sciences, Jawaharlal Nehru University, New Delhi and currently on leave is Professor at Shri Ram Centre for Industrial Relations and Human Resources, New Delhi.

T.S. Saraswathi is working as an Associate Professor in Child Development at Baroda and is currently at Cornell University as a Fulbright Visiting Professor. Her current research interests : Child Development from an ecological perspective socialization.

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CONTENTS

The Midget Bureaucratic Phenomenon— Reflections on System Transformations in Universities	<i>Y. Raghaviah</i>	... 157
The Role of the University Grants Commission in Framing the Policy of Higher Education,	<i>A. Mathew</i>	... 177
The Dynamics of Change	<i>Anrik Singh</i>	... 197
Salvaging Higher Education: Limiting the Importance of Degrees	<i>John Kurrien</i>	... 207
Social Work Practice: A Recent Definition	<i>H.M. Rajyaguru</i>	... 217
Science-Technology Interaction: A Systems Model for Education	<i>M.V. Ananthakrishnan</i>	229
Question Banks and Construction of Tests and Reporting of Results for Internal Assess- ment and External Examination	<i>H.N. Mahajan</i>	... 235
Notes from Research		
Stress—Experience of Higher Education Students	<i>M.S. Rama Murthy</i>	... 245
A Comparative Study of Anxiety Level Against Graduate, Post-graduate and Ph.D. Students	<i>Swarn Pratap, N.K. Seth & N.K. Gupta</i>	249
Job Satisfaction and Organisational Climate Among University Teachers	<i>S.K. Srivastava</i>	... 251
Value Structure of Higher Education and the University Teachers	<i>Sumila Gupta</i>	... 254
Variations in Economic Position of College Teachers by College Management, Sex and Caste	<i>V.V. Ramana and C.R. Prasad Rao</i>	... 259
Communications		
Merit List on the Basis of Z-scores is Not Valid	<i>R.D. Godbole</i>	... 269
Vocationalization of Commerce Education	<i>U.S. Prasad</i>	... 271
Commerce Curriculum in India: Need for Reforms	<i>R. Satya Raju</i>	... 277
Preparing Future Educational Leaders to Write for Scholarly Publication	<i>D. Barry Lumsden</i>	... 279

Financial Management of Universities in India	<i>C.B. Padmanabhan</i> ...	282
Our Research and Research Scholars	<i>R.K. Malhotra</i> ...	285

Book Reviews

Philosophy of user education by Girija Kumar and Krishan Kumar	<i>S. Ansari</i> ...	289
Reading in English as an International Language by Larry E. Smith (ed.)	<i>R.K. Singh</i> ...	291

Books and Journals Received

Our Contributors

The Midget Bureaucratic Phenomenon—Reflection on System Transformations in Universities

Y. RAGHAVIAH

This essay relates to a study of the growth of new structural and functional elements in universities and an enquiry into the implications of the new bureaucratic phenomenon for higher education policy development. Its purpose is limited to providing analytical and research framework. The empirical indicators described in the succeeding portions are confined to experience obtained in Indian universities (names of the universities, personalities and locations are avoided for reasons of academic propriety). As a word of caution, it may be stated that the elements of structural and functional transformations indicated herein are only trend indicators, with variations in the degree of crystallisation. In order that it might serve as a useful backdrop, a brief analysis of characteristic elements in university systems which have come to set new directions in organisational change has been made.

The Systemic Transformations

The university, as we know, is a typical people moulding system. This essential character of the university has come to release forces leading to gradual transformations from a closed monastic type of organisation to an open system. One dimension of the predicament of 'people processing' nature and 'openness' is that a university has to function in highly amorphous and fleeting conditions, of turmoils, upheavels and conflicts. For, in addition to what Katz and Kahn would describe as the traits of an open system, the university is a vortex and a barometer of transforming socio-economic and political forces.¹ The university, by its very functional character, generates conflicts, reflects dominant social conflicts, provides

normative validation and legitimacy to contending forces and germinates ideational crystallizations for the eventual conflict resolutions in an ongoing dialectic of social change. Indeed, a conflict-free centre of learning is hardly worth anybody's attention. Again, it is one system which claims inherent functional legitimacy to stand in opposition to the whole social system and in this sense it, intermittently, takes responsibility to direct and redirect sets of social expectations and social change process. In its role to enquire, innovate and determine the social desirability of change elements, the university remains a centre which thinks today what the society, often, realises tomorrow. Here is a situation which sets a perpetual conflict process and accusations of ivory tower romanticism become equally regular. From different dimensions, the modern university is decisively an open system, an avocation of everybody's concern. The net consequence of its purposes, processings and productions is that the organisational and systemic elements are both unique and complicated.

The University System—A Functional Polyarchy

The university system has within itself some interesting auto-functional structures, in a highly evolved form. These quasi-autonomous, coordinate and interlocking sub-systems, reflect, in vivid terms, the basic instruments of social organisation itself, evolved over centuries. The boards of studies, the faculty councils, the academic council, the senate and the syndicate, the self-governing student's union councils, the scores of committees dispersed over the entire system and not the least important, the ever-growing number of quasi-autonomous advanced-specialist centres of learning and project-based research groups makes a university system a functional polyarchy. But, paradoxical it may seem, this very same polyarchical character tends to generate and even intensify newer conflicts, and the system is perpetually under severe threats of disorganisation. While the aforementioned devices, the committee network and the dispersion of decision-making operate in a dialectical fashion of balance-in-balance and rebalance and in curious paradoxes, the modern university is concurrently developing new patterns of response to new challenges, for better system adaptation and maintenance. The new instruments of management and coping mechanisms are highlighted elsewhere in this paper.

The Evolution into a Mega-Bureaucracy

The university, today, has evolved itself into mega-bureaucracy. It is a type of bureaucratic system in which inter multiple hierarchies, alongside auto-functional and peer group type of collegial subsystems. A bureaucratic combine, as it were, the university has the regular academic hierarchy, a professional administrative structure, the academic sub-bureaucracy (consisting of the heads of departments and departmental committees, the deans and their councils), the emerging phenomenon of midget bureaucracy

and the student self-governing heirerchy. A mega-burcaucracy is typified by, in nutshell, internal structural differentiation of highly evolved kind, a diffuse functional and output range and incorporates within itself diverse structures (bureaucratic, democratic and client group nature). It is a bureau-cracy of bureaucracies.

A Government by Committees

The university is today, more than ever before, a government by committees which is an extension of its essential self-governing postulate. It is a system which employs the principle of committee-based decision-making for a wide range of activities. The whole system is interspersed with numerous committees of specialist kind, general management-oriented, unifunctional and multifunctional types and committees of interlocking nature. The disparate and diffuse character of the system neccssitates employment of the committee principle on a wide scale. Again, paradoxically, the committee network, among others, is another contributing factor to functional incoherence, in as much as numerous sub-decisional processes have not only to be directed but integrated into organisationally meaningful policy frame.

A Politicised Non-Polity

A modern university may be described as a politicised non-polity. While the university is a politically sensitised and politically influential system, it is, by definition, a non-polity. Its normative and functional foundations are fundamentally non-political in nature. Its basic attributes, of scientific objectivity, value-neutrality in teaching and research (to the extent humans could attain), non-partisan dispositions and the inescapable elements of democratic process and secular ethics make a university non-political entity. Yet, as a unique organisation, a university is a government by itself, a state within a state. It enjoys permitted sovereignty, a limited territorial sanctity, an inclusive representative fabric and public accountability mechanism (the senate) within its own system boundaries. Thatway, a university is a non-polity, with several important attributes of polity inherent within the system. In addition, from the standpoint of larger political processes, it is a mini-political arena where ideological battles are continually waged. The university is a laboratory, as it were, where political values and political strengths are tested by varied elite groups. The academia, though professionally non-political, always retains a professional right to pass judgements on public policy issues. The students constitute such verile political force that governments also get toppled under the weight of its pressure. The university, today, is one of the highly politicised open systems in the whole fabric of social institutions of the society.

The repercussions of this enigmatic position, of politicised system which is at the same time a non-polity, are that the university is always at cross-roads. The outstanding consequences for the system as such are perpetual conflict

conditions; increased questioning of the basic assumptions and postulates on which universities are founded; demand for the redefinition of the roles of universities vis-a-vis the community, the students and the relevance or otherwise of contemporary educational values, practices and outputs. But, consequences of even more serious kind are progressive erosion of university autonomy, territorial sanctity and increase in state interventions as of political interferences; greater bureaucratisation, formalism and increase in managerial burdens. The fact is that the need for an organisation to develop newer coping mechanisms, in order to contain disorganisation threats emanating from varied internal and external sources, (to facilitate system adaptation and maintenance) is nowhere as intense as in a modern university.

The Dilemma of Non-Executive Culture

Finally, among formal organisations, the university, like the monastery, is one system whose culture and ethos is dominantly non-executive in character. It may seem paradoxical that an organisation with declared purposes and periodic outputs should be dominated by non-executive culture. But, both historically and functionally, the university has been, mostly, a sort of desk-culture, in the sense that the teacher goes into the class-room or library and the clerk looks into the files. To this must be added the typical traits of seclusion, exclusiveness, partial secrecy (as in the case of examinations), restricted and confined territorial compus. Importantly, mention should be made about the culture of academic self-governance and the fused academic-administrative action nexus in order to appreciate the peculiarity of non-executive culture. It is not argued that university systems are devoid of executive administration. However, what can be stated clearly is that as the academic remained a half-baked manager, he has worked in myriad ways to stunt the growth and modernisation of professional administration. The dilemma of a modern university is that its executive responsibilities (of managing many new things of corporate significance, apart from the sectional ones) have grown enormously in range and quality, without the corresponding growth in trained professional executive cadres. It is the proposition in this paper that the growth of midget bureaucracy is a system's response to meet the new executive challenges in modern universities.

Nature and Intensity of Disorganisation

In the light of the aforementioned propositions about the nature and predicament of a modern university, it is possible to visualise the sort of disorganisation hazards which the system is most likely to encounter. Although any attempt to list out disorganistaion elements appears an exercise in redundancy, a quick survey is useful enough, to provide suitable perspective to the succeeding analytical framework. It is possible to identify the elements of disorganisation in a system by observing organisation-wide disturbances, those of systemic character and by their specific occurrences.

Among other factors, disorganisation manifests either because of inadequacy of resources or incompetent mobilisation of available resources. Extra-organisational forces, often incapacitating the system's coping abilities, also release disorganisation. Then, if a system is a critical culture item in a more complex macrocosm, it is more prone to be affected by fundamental change processes. That way, critical institutions like the university in a social system under 'compression effect' and rapid modernisation, are most likely to suffer from severe disorganisation problems. Additionally, social organisations, like organisms, have inbuilt toxanomic properties. In addition to the contributing factors of systemic nature already described, the nature of conflicts emanating from the internal power configuration patterns, the pathological residue of the complex interactional networks and the crisis of reconciling individual and group goals and those with organisational objectives tend to generate a variety of disfunctionalities. These, in turn, tend to take specific toxic formations resulting in intensification of conflicts, systemic imbalances, reduced coping abilities and inefficient use of available resources. What, then, are the specific elements of disorganisation noticable in modern Indian universities? Briefly, again, the following, (most of them being reflections of breakdowns confronted in modernising societies) appear commonly noticable:

(1) There is growing non-conformity to officially declared values and policy pronouncements from teachers, students and administrative personnel in universities. The officially declared values, including the implicit and implied ones, are values which constitute the basic goals and genetic-core purposes for the achievement of which a university is established. These values are too well known to require listing.

(2) A pathogenic corollary of non-conformity is decreasing interdependence in universities, between teachers and students, teachers and teachers, students and students and between the management and various functional groups. Interdependence is interpreted, here, as a normative position, of sets of relationships which are constructive, wholesome and appropriate for the fulfilment of organisational objectives. These sets of relationships are contrasted from selfish, parochial and sectional aggrandisement orientations. A matter of concern is that decadent and sectional interdependencies are on the increase, signifying dysfunctionalties and intensification of disorganisation forces. The decline in constructive and organisationally functional interdependencies tends to reinforce and accentuate non-conformity.

(3) Relatedly, the increase in variant values, which are of conflicting nature, have tended to reduce wholesome and normatively desirable interdependencies in the universities.

(4) Since the dysfunctional type of interdependencies are increasing and as there is increase in conflicting values, there is general breakdown of cementing relationships between individuals and groups. In other words, the failure of informal methods for promoting acceptance of dominant values

is producing greater bureaucratisation, centralisation, and multiplication of rules in university systems. There is growing emphasis on centralised management, processes, rules and bureaucratic approach in universities.

(5) While general moral decadence, professional deformities and dys-functionalities are on the increase, the universities are also being subject to continual modernisation pressures. The changes introduced, from time to time, are naturally producing disruptions to the older and known patterns of work and traditional modes of work interactions. For instance, traditional learnings of teachers are fast getting outdated and degenerating into what may be described as knowledge trivia. Teaching inputs have become formal, mechanical and mostly transmitted in capsuled form. Since there is general decline in performances and growing redundancy of older skills and technologies in the face of incessant new demands, born out of reform and change, the teacher is resorting to trade union type of service protectionist activities. This kind of functional escapism against new needs is also reflective of growing disorganisation in university systems.

(6) The growing 'delinquency, crime and vagrancy' in universities is a matter of common place experience to warrant explication. The growth and spread of mass violence, even to salaried cadres, are tending to disrupt the systemic balances and in turn, producing functional retardations, thereby increasing the external social pressures and controls on the system.

(7) Then, mention must be made about another widely experiential process, especially in developing countries, the spread of democratisation and equality movements. A university, today, is no more a sacred-sective-monastic like system abounding in semi-magical spells and arur. Historically, centuries of liberation battles, some piecemeal and some in wider societal conflagrations, went on and on to make the university imbed democratic and equality norms and practices. As in the case of the ecclesiastical administration, the university had to pass through the agonising process of transforming itself from the restrictive and selective democracy of the few and among equals to a participative and power-sharing system of many. Universities in developing countries are in the grip of this kind of process which is dislodging the "status and standing of older elites and holders of power positions and have come to modify traditional loyalties".

(8) Finally, it is useful here to, briefly, touch upon some of the commonly identifiable specific disorganisation elements in modern Indian universities. From the standpoint of the student community, it could be seen that a number of factors are accentuating disorganisation. At the risk of stating the obvious, a few of the important factors are listed below :

- (i) apart from the enrolment boom, reservations for certain categories of students are leading to more and more conflicts between the upper castes and reserved categories;
- (ii) there is increase in the number of 'professional' students, touts and middlemen type of student leaders;

- (iii) the emergence of factional-ideological mixes and polarisations is another disturbing feature. A trend of serious kind is factional student formations along ideological polarisations and the resultant group confrontations;
- (iv) there is greater crystallisation of politico-ideological groups and more programmed city-wide and state-wide aggregations of student politics. This is leading to progressive importation of non-campus students and non-student political supporters for agitations;
- (v) one other feature is the rampant 'Diploma Disease' and decreasing instructional intakes from formal sources;
- (vi) the increase in the number of students with 'vacant-neurosis', the approach that since one has to face unemployment, social degradation and anxiety after obtaining a degree, the tendency is to escape from the agony and mechanically pursue new courses;
- (vii) there is increase in the number of well-to-do students interested in postponing avocations and employment, especially the children of the old rich, the neo-rich, the gentry and the urban upstarts;
- (viii) as a result of growing number of rural-based students, the problems of alienation, rural-urban cleavages are on the increase;
- (ix) semester examinations, internal assessments are producing momentary preparations, notes-gathering from senior students and demands for capsuled instruction; and
- (x) finally, there is growing tendency to demand placements, from 'professional' students, agitational leaders, known student 'profligates' in academia as teachers and research associates.

Again, general decadence in the teaching community has assumed alarming proportions and its different manifestations has come to create grave concern to the community. Among many, the following appear prominent: the dwindling teaching inputs as of decline in learning intakes; growth of low quality, poor methodology and commercial type of research outputs; the phenomenon of 'learned weakling' minorities and the majority 'merchant adventurers' among teachers, with degrading and stultifying impact on the academic work; the scramble for quasi-administrative power positions to escape from the rigours of knowledge requirements and also gain petty cash advantages and privileges; the growth of bureaucratic hegemony and the progressive internalisation of the ethos of power is knowledge; and the general decline in teacher discipline and commitments. From the standpoint of professional administration, growing bureaucratisation, trade unionism and accentuation of the traditional academic-administrative dichotomy are, generally, noticable trends. To these must be added the decision-making adhocism, political pressure-based decisions and actions, the source diversification for the recruitment of Vice-Chancellors and their rapid turnovers to visualise the range and character of disorganisation forces operant in university systems.

The disorganisation forces, of social, systemic and sectoral kind, operant in the university system exposes it to actual and potential imbalances. But, the negative entropic properties, the information input, the negative feedback and the coding process are mechanisms structured in an open system to prevent or retard entropic process. In other words, the system by a process of selective differentiation and efficient and specialised use of energy incessantly fights disorganisation and works toward system maintenance and adaptation. A high crisis-prone, amorphous and loosely-knit system as university encounters severe problems of establishing minimum functional concord and balance. In so far as university systems are concerned, one outstanding development in the direction of negative entropy is the phenomenon of midget bureaucracy. For purposes of this analysis, midget bureaucracy is taken to mean a management-executive structure, in juxtaposition between the two regular hierarchies viz., the academic and administrative, which has outgrown to render a wide range of twilight zone services in university governance and administration. It is the premise that the phenomenon of midget bureaucracy is a particularised and a specific systemic response to overcome actual and/or potential disorganisation ravaging modern Indian universities. It is a reconfiguration of particular resource elements in the system which, in their new form and substance have developed capabilities and specialised competencies to counter and decelerate the threats or actual disorganisation in the system. The reconfiguration of resource elements, to form midget bureaucracy, is made through selective differentiation, development of combination skills and integration of such resource elements for the most efficient use against perceived disorganisation threats.

The Structural Elements of Midget Bureaucracy

The midget bureaucracy is not only a new and recent phenomenon but also a subsystem which is evolving on certain identifiable lines. While it has existed in a rudimentary form, it has come to attain definite structural and functional crystallisation in recent times, especially in the face of widespread crisis conditions. Its core structure consists of a variety of offices and personnel drawn, mostly, from the academics: Principals, Vice-Principals and Students Union Advisers of campus colleges; Chief Warden of Hostels and Messes; Additional and Assistant Chief Wardens; General and Mess Wardens; Controller and Additional Controller of Examinations; Chief Proctor and Proctors; Dean of student affairs and Student Welfare Officers; Director of Sports and his assistants; Director of NSS and Coordinators; Chief of the Employment and Guidance Bureau and the placement Officers; the Coordinating Officer, UGC Unit; the Public Relation Officer; the University Engineer, the Guest House Officer; and the secretarial staff of the Vice-Chancellor and Registrar. As could be identified, the midget bureaucracy reflects the following characteristic elements.

It is a management-executive structure which renders services falling within the broad rubric of twilight zone administration, such as campus

college management, hostels and mess administration, examination administration and campus law and order. The management functionaries of each office unit are drawn, mostly, from academics. Each office unit, as for instance the Principal's Office or the Chief Warden's Office is supported by a complement of permanent office staff. Both by evolution and the nature of responsibilities (a mixture of quasi-academic and quasi-managerial functions), it is poised between the two traditional hierarchies. The sub-system, functioning on unit basis, though crisscross vertical and horizontal linkages exist, vows direct allegiance to the Vice-Chancellor and the Registrar. Each unit, usually, receives orders and instructions directly from the Vice-Chancellor and the Registrar and reports to them directly on unit basis.

The midget bureaucratic structure, organised on unit basis and directly responsible to the Vice-Chancellor and the Registrar, play three distinctly identifiable and yet interrelated roles. Managing respective unit offices and implementing related decisions constitute one component of the total responsibilities. Solving issues and jointly managing affairs of inter-unit nature (e.g. problems having hostel-college ramifications are taken up by the Chief Warden, the campus college Principal and the local Students Union Adviser) make up the second set of responsibilities. Crisis management and a host of undefined roles, specific assignments of localised or all-university kind, major university functions and programmes and non-campus assignments (e.g. negotiations with government, discussions with civil and police officials, lobbying occasionally with powerful politicians) are the third set of responsibilities. In addition to the routine unit work, the midget bureaucrats may be requisitioned to serve in different combinations, depending on the nature of the task, situation and skills necessary. The degree of closeness to the Chief, the amount of reliability and confidence he commands and the nature of his experience and abilities condition as to the task assignment.

The core functionaries, described as midget bureaucrats, are supported and assisted by select administrative loyalists, the V.C.'s and Registrar's Peshi, the university Engineer, the Medical Officers, the Guest House Officer, the Public Relations Officer and the university officials. Again, the midget bureaucrats are supported and assisted by select academics—the non-office academic quislings of the establishment, of different levels—select Deans, Heads of Departments, loyal professors and teachers. They are the Vice-Chancellor's friends, castemen, region/district-men and favouritism. So that, structurally, the midget bureaucracy is a core managerial subsystem with its own unit offices. As stated, this structure is supported and directly assisted by two adjuncts, one consisting of loyalist administrators and the loyalist academics and the other by a host of externals, of para-organisational kind. If the midget bureaucrats operate as Executive Vanguard and the first type of adjunct—the administrative and academic loyalists of the regime, as Peripetatic Defenders, the support externals do the job of Rear Action Rearguards. While the Vanguard work in the forefront, the Defenders operate as sort of morale boosters, grapevine coterie, counter-propagandists against anti-establishment activities, and sometimes as the Vice-Chancellor's

'gestapo' and the 'stand by men'. These 'peripetatic' bands move about everywhere, from campus corridors to the state secretariat. Groups of 'blackguard' defenders are pressed into service, often, to assist the mid-get bureaucrats, at different points of time, to react to specific situations. The Rearguards are a more amorphous and dispersed set of individuals—the Vice-Chancellor's police friends, sympathetic legislators and powerful politicians, civil servant friends, past student leaders, select syndicate and senator friends. They, in myriad ways, function as a general buffer-support base to the sustenance of the regime and come to the rescue of the Vice-Chancellor in times of crisis and controversy.

Here, it is pertinent to make some observations on the question of the midget structure reflecting traits of bureaucracy. The subsystem is yet in the process of evolving itself into a distinct bureaucratic structure and hence some of the traditional attributes of bureaucracy are absent. As stated elsewhere, it is a flat and somewhat decentralised structure. There is neither single line of control in the strict Weberian sense nor a career service in the proper sense of the term. Small number of levels in the hierarchy and appointments for fixed periods render the Weberian criteria inoperative. But, office structure, division of labour, interrelationships, defined spheres of competence, growing expertise, continuous administration, a scheme of rewards and punishments, reliance on rules and regulations and authority-responsibility structure are as much noticeable in the midget bureaucratic phenomenon. However, the characteristic elements of midget structure, described in this essay, reflect a marked departure from the classical definitions of bureaucracy. In the light of the above, the classical descriptions of bureaucracy are set aside for purposes of this enquiry. Instead, it is taken that such phenomenon described herein as midget bureaucracy necessitates a reappraisal of bureaucratic theory in order to make it empirically valid and more inclusive frame of reference than what it is today. This would entail recognition of structured task groups, functioning on sustained basis and evolving on distinct lines as unique bureaucratic phenomenon within bureaucracy. If administrative units get aggregated into a viable subsystem, with its own identities and specialised tasks, it is taken as functional response to the needs of the system, and not an administrative aberration. The uniqueness of the new bureaucratic phenomenon is, among other things, the combination of face-to-face primary modes of interactions with official processes, the system's way of responding to new challenges. Finally, the midget structure is taken as sub-bureaucratic kind with elements of formal and informal organisations structured into a functional unity.

A diagrammatic representation of the midget bureaucracy together with its support adjuncts could be projected.

Again, it should be stated that the midget bureaucracy, in a way, is a functionally fused subsystem. It is fused in the sense that the functionaries, singly or in task groups, discharge a variety of responsibilities and render multiple functions. The bureaucrat may be asked to render different types of service, (supra to the specific unit based duties) from getting a drainage

system repaired on an emergency basis to crowd control. Some midget bureaucratic functions are non-singular in as much as those are performed by several persons, as for instance, the Chief Warden, Principal, the Students Welfare Officer and the Students Adviser may be doing the same work on different occasions (as for instance, averting a clash between two hostile student groups). The roles of the midget bureaucrats are also diffuse in character, in the sense that most aspects of management and problems of a myriad kind come within their range of work. Although midget bureaucracy consists of an amalgam of diffuse-non-diffuse functions and roles, the positions reflect non-singularity and diffuseness in nature.

The midget bureaucracy performs, in addition to statutorily imposed specific ones within defined spheres of competence, (e.g., Principal's Office), a variety of functions of system—relevant kind and having organisation—wide implications. For example, it may be using secretly, a section of students or an ideological student formation to neutralise the militant postures and a threatened defiance of another group. Some of these responsibilities involving formal, non-formal and informal roles may be divergent and even untenable from the standpoint of approved and legitimate official norms and declarations. In a university, one controversial issue has been cutting and serving chicken on certain Hindu festival days in the hostels, otherwise known as the 'mini-chicken war'. The right wing boys insisting that it cannot be cut or served on specified festivals and the left wing boarders demanding cutting and serving of chicken on those days. Personal predilections and beliefs of vegetarian and non-vegetarian wardens apart, enquiries revealed that a variety of instruments, both legitimate and illegitimate, came to be employed to maintain minimum balance and corporate order. In this sense, the midget bureaucracy renders disparate range of services. It is this kind of peculiar combination type of role responsibilities which reflect diffuse and non-singular traits of the subsystem.

The ethos, nature of interactions, modes of functional aggregation and activity relationships among the members are partly bureaucratic and some are of primary activity type. Bureaucratic rules and office processes and face-to-face interactions constitute two sides of the same coin. While some processes of primary type are extensions of the bureaucratic regulations, others are exclusively rule-governed and functionally specific. In one sense, the growth of midget bureaucracy is a partial response and a corrective to the growing inflexibilities, routinisation and standardisation of administrative process in the universities. The new subsystem, is indeed, a unique mechanism which combines within itself the qualities of bureaucratic contraction and amazingly personalised interactions, in order to facilitate functional flexibilities.

Almost all the midget bureaucratic positions are non-competitive, discretionary and contractual-tenure appointments. The appointments and shifts from one position to another are made by the Vice-Chancellor for specific terms and renewable at his discretion and formally approved by the syndicate. It is interesting that by a well-accepted convention, the syndicate

refrains from interfering in the choice of persons for different midget bureaucratic positions. Generally, a new incumbent Vice-Chancellor, watchfully permits those appointed by his predecessor and may begin strategic replacements after about six months from his takeover. Although some positions, like the Chief Warden, are statutory and those occupying them have a right to continue for the term, he who loses the Vice-Chancellor's confidence has no way except to give up. And most 'dismissals' come in the form of voluntary resignations. The whole set-up, therefore, is firmly under the direct hegemonistic grip of the Vice-Chancellor.

The situation mentioned in earlier paras, paradoxical it may seem, is itself a causative factor for the gradual crystallisation of the midget bureaucracy into a distinct and formal structure. These 'Palace Guards' or 'Kings' soldiers' so to speak, are gradually being welded into a critical functional item in the system. While it does not carry service in the strict Weberian sense, there is a perceptible trend toward perpetuation of select functionaries for a number of years, even as Vice-Chancellors come and go. There has been increase in the number of levels in the structure, in recent times, both because of increasing workloads and widening the scope for patronage distribution. In hostel administration of a university, in the place of a Chief Warden and single warden for each hostel some years ago, we have one additional Chief Warden, three Assistant Chief Wardens, two Wardens for each hostel, with a big contingent of other employees. It is interesting that some academics in given midget bureaucratic positions came to be given other assignments on completion of their terms. While completion of term of office would mean going back to the academic mainstream, there is growing trend toward a variant form of 'circulating succession' among office holder.² Here, a set number of offices seem to circulate among a set number of veteran functionaries. In other words, there is circulation of midget bureaucrats within the core structure of offices. In one university, a Vice-Principal was made controller of examinations, and an outgoing chief warden was made the chief of employment guidance bureau. This kind of circulation is also tending to develop vested interests, further specialisation and efforts to demonstrate 'indispensability' among the functionaries. In short, the Vice-Chancellor, through control over recruitment of persons of confidence and competence as well as his direct hegemonistic supervision is tending to facilitate integration and cohesion in midget bureaucracy.

Although authority and important powers are vested in the chief, the specialised and complicated tasks require disproportionately greater delegation of powers to the functionaries. The chief, as it were, makes a part abdication of authority to enable them to take spot decisions and make quick executions.

The appointees are given extra allowances and emoluments, teaching exemptions, and a variety of non-monetary privileges like transport, telephones, discretionary spending of petty cash, emergency free lunches and dinners, free accessibility to the Vice-Chancellor, Registrar and other key officers, invitations to official and semi-official functions and permitted

discretions in big purchases, big repair works and in spending small-looking amounts on fluid works (as for example getting a portion of printing done at a private press 'since the university press is overbooked').

Finally, in the tri-structurisation of the bureaucratic phenomenon in modern Indian universities—the academic, midget bureaucratic and the professional administrative hierarchies—the midget structure seem to be gaining relatively, more powers, decisiveness and strength. Executive heads seem to be more and more concerned with the task of welding different midget bureaucratic groups into a homogeneous and well knit bureaucratic subsystem, with its own identities, ethos, work ethics and array of management instruments.

The Role Responsibilities and Behaviour Orientations of the Midget Bureaucratic Functionaries—An Extended Discussion

The range of functions and services rendered by the midget bureaucrats vary from regime to regime, situation to situation and the number and intensity of emergency conditions. Among them are persons who specialise in crisis management, organisation of big conferences, difficult liaison work, efficient and economical unit administration and some concentrate on doing private errands of the Vice-Chancellor and other top men. As stated elsewhere, they are put into service, for different errands, cutting across office unit boundaries. The notable instance in the matter is the responsibility assigned by the Vice-Chancellor of a university to the chief warden and his 'Gang of Twenty' (wardens) to conduct examinations in one of the troublesome campus colleges. Then, on the basis of intelligence reports, a group of tough-men may be asked to keep waiting at the Vice-Chancellor's lodge, till late in the night, in order to face the raiding student agitators. Some may be asked to deal with headstrong middle management civil servants in the secretariat and involve in marathon negotiations (as for instance the issue of fixing scholarship amounts). The range of functions and services could be summarised thus :

(1) Office management and administration in respective spheres of competence and units assigned.

(2) Quasi-legislative roles such as framing of rules and regulations, (subject to the formal approvals by appropriate bodies) either in interlocking committees or in the capacity of specific office holder.

(3) Preparation and initiation of subsidiary policies and programmes and obtaining approvals from the Vice-Chancellor and appropriate bodies.

(4) Quasi-judicial roles as interpreting rules, as exigencies warrant and administer petty punishments (e.g., stoppage of boarding facilities or expulsion of erring students).

(5) Advisory roles, on various matters, as well as secondary type of decision making.

- (6) Development, promotional activities and innovations in respective activity spheres.
- (7) Negotiations, conciliations and working out compromises.
- (8) Work as sensing units and expeditors.
- (9) Trouble shooting and crisis management.
- (10) Liaison men, public relations, including counter-propaganda.
- (11) Work on special missions, both public and secret, special squads and committees.
- (12) Planned rumour mongering, letting out test balloons and operate, sometimes, as trouble-creators—may be to ward off bigger trouble elsewhere (e.g., diversionary tactics of select persons planted in emergency hostile general body meeting of teacher's organisations).
- (13) Efforts to ward off and silence anti-establishment action tendencies.
- (14) Work as opponents to non-conforming heads or Deans.
- (15) Function as good estate general managers, especially efforts relating to safeguarding 'anonymous property of the anonymous government' like a university (one university lost around 1/3 of its landed property by encroachments, falsification or destruction of specific land records).

If in this background, the modern Indian university is, progressively, becoming formal and bureaucratic system is stating the obvious. More importantly, the ethos of 'power is knowledge' is rapidly spreading as low learning intakes by teachers and even lower teaching inputs go on unquestioned. Then, as research and published work have, mostly become commercial propositions, respect for academic excellence is receding into oblivion. It seems that knowledge acquisition, generation and wholesome transmission have become secondary preoccupations for many academics. No wonder, in an atmosphere of 'learned weakling' minorities and the majority 'merchant-adventurers', the tendency among enterprising academics to search for suitable managerial positions is on the increase. A number of midget bureaucratic positions under the Vice-Chancellors' discretionary appointment sector have opened up avenues to work in the twilight zone of university administration. In this context, it will be interesting to examine the behaviour orientations and the style of functioning of academics occupying midget bureaucratic positions.

First, teaching rebates, extra-academic responsibilities of varied nature and the tension-anxiety ridden character of the assignment makes the midget bureaucrat a virtual non-academic. It is understandable that there is gradual decline in scholarship, fall in new learning and research and haphazard preparation for intermittent teaching. Under such conditions, it is clear that he tends to exaggerate the importance of problem-solving in management and plume over the small, little managerial successes before the dumbfounded, nay, aghast co-academics. Second, as a corollary to the above condition, most academic managers tend to cultivate teachers with low academic profile and scout for recruits to midget bureaucratic positions—both as officials and informal blackguard supporters.

Though in another context, Prof. Wright Mills gave a brilliant analysis of the character of bureaucratic ethos in social science research and the development of bureaucratic social science in the United States. In a critical evaluation of the state of social science research and the practice of 'abstracted empiricism', Prof. Mills stated, "the idea of a university as a circle of professional peers, each with apprentices and each practicing a craft, tends to be replaced by the idea of a university as a set of research bureaucracies, each containing an elaborate division of labour, and hence of intellectual technicians". The trivialisation and commercialisation of research promoters in that enterprise are developments which have become virulent virus, since the 60's, even in a country like India. But, the anguish and pathos reaches new proportions when we think of the 'younger recruits'. "I have seldom seen one of these youngermen, once in puzzlement. And I have never seen any passionate curiosity about a great problem, the sort of curiosity that compels the mind to travel anywhere and by any means, to remake itself if necessary, in order to find out".³ Several of the 'Younger recruits' to teaching and research positions in the Indian universities, irrespective of any particular discipline or faculty, fit so well into Prof. Mills description of the American counterparts, "In some of these students, intelligence itself is often disassociated from personality and is seen by them as a kind of skilled gadget that they hope to market successfully". In so far as the composition of the midget bureaucracy is concerned, it could be safely taken as appropriate adjectival description for both younger and the older ones. Most of them are mostly academic midgets and no better than managerial mules.

The point that deserves attention is that non-academic work is, gradually, gaining new respectability and acceptability in the university system. As a result, there is marked change in their style of functioning. They seem to become officious and some even tend to project images of local tyrants. Third, in the backguard of massive official patronage and heavily buttressed by blackguards and office machinery, most of the midget bureaucrats not only get most of their personal work done but also distribute small favours to their private admirers and privately nursed support academics. That way, each midget bureaucrat enjoys elusive powers and amazing accessibilities (some of them pride as having right royal way even to the kitchens and bedrooms of the Vice-Chancellors). Each midget bureaucrat works out interrelated bounded zone of authority and influence, as for example, a zone which the Vice-Chancellor permits and a second that he creates for himself by a variety of demonstrations of closeness to the chief of the university. Finally, the psychopathology of midget bureaucracy is that each functionary tends to labour under the morbid stereotype that not only the 'whole time' academic is an 'idiot' but that the university system would collapse in the absence of his magical interventions. The ethos of indispensability of the 'messiahs of new management' is becoming widespread in the trouble ridden universities.

The fact is that the progressive crystalisation and the growing strength and power of midget bureaucratic functionaries are almost inescapable

elements in the management of modern universities, especially the ones in the new nations. The point is that the growth of midget bureaucracy is a necessary development except that its disfunctionalities and youthful deviant behaviour need suitable corrections. But, a growing mid-executive structure under semi-formalised conditions is most likely to indulge in impetuous excesses, as the conquering armies tend to do. Some of the irritants could be eliminated in the process of sensible segregation of management-oriented academics into a formal executive structure. Finally, in an enterprise-type of university, mechanisms and procedures have to be worked out to mitigate the miseries and anguish of the 'learned weakling' minorities, in order that the university retains traces, signifying a centre of learning, research and innovation (not a 'manufacturing' organisation).

The Phenomenon of Midget Bureaucracy in Functionalist Framework⁴

For purposes of this essay, it is taken that yet nothing serious has really happened in post-industrial societies to warrant abdication or abandonment of scientism, logical positivism and behaviouristic approach in social science enquiry. It is, indeed, along way to go even for the West. The late 60s protests, reflecting existentialist-phenomenological clamour (including in the United States and Western Europe) have, no doubt, produced different new approaches in bureaucratic theory, as for instance the so-called New Public Administration movement. True enough, such conceptual and theoretical formulations are, typically, reflective of the peculiarly specific and contextually grounded problems of post-industrial-affluent societies. But in the historical continua of our present civilization, their relevance to Third World social, economic and cultural conditions, as found in a country like India, appear to be dubious. Indeed, contextually speaking, we need more of scientism, technologisation and secularisation of social and ethical life. Since in the Folk-urban continuum, we are this side of the midpoint and seem to have enough of what existentialists and phenomenologists crave to establish elsewhere, it is, relatively of less relevance to us.⁵ It is, therefore, we are more interested in 'system', corporate identity, welding plenty of heterogeneity into integral unity. These are contextually determined needs and hence functional necessities. That way, functionalism is meaningful.

In the light of the above, the growth and structural crystallisation of midget bureaucracy in university systems could be examined and explained from the standpoint of functionalist categories of analysis. It is taken that the phenomenon of midget bureaucracy is an item in the system which is growing in importance directly proportionate to the increasing threats of disorganisation. Its *raison de tre* has been crisis management and system maintenance. In otherwords, it exists as an item whose function it is to promote adoptive and adjustive capabilities of the whole system. The midget bureaucracy renders functions (observed consequences) which make for system survival and maintenance. These may take, various forms, of preventions, interventions and corrections. Performing multiple roles, it is a body of personnel

whose aggregation into a distinct bureaucratic subsystem is a system's response to the perceived disorganisation threats. To put it differently, the character of aggregation of personnel is a particular form and mode of utilisation of available energy within the system as the external support base (described elsewhere as Rearguards) is a sort of importation of energy of particular relevance from the external environment. Again, broadly viewing the phenomenon from the open systems approach, midget bureaucracy is a product of selective differentiation, efficient and a qualitatively different kind of utilisation of energy from within. It is optimum use of energy in specialised combinations to fight perceived entropic process in the system. One of the critical functions of the midget bureaucracy is to provide negative feed-back to the system and also correct deviations. It also functions as a coding mechanism and provides signals on a selective basis and of system-relevant kind.

In one sense and along with other subsystems, the midget bureaucracy is a device to maintain stability and homeostatis in the system. If we take eclectic functionalist approach, it could be observed that a Vice-Chancellor utilises the midget bureaucracy, in conjunction with diverse support groups, in different combinations, as the situation, issue and circumstance warrants. In fact, a modern Vice-Chancellor is himself an eclectic. He may call into service 'seven sisters' (the campus principals) or the 'Gang of Twenty' (the Chief Warden and the compliment of Wardens). The Vice-Chancellor may introduce seasoned blackguards to create trouble (for instance, in a hostile teachers' union meeting) or the Rearguards, to negotiate with contending student activist groups. Administering diverse groups in an open system, the Vice-Chancellor is functionally eclectic in as much as he has a package of management tools to use the way his judgement dictates. Among several others, the midget bureaucracy is, perhaps, the most critical management instrument.

The midget bureaucracy is a sub-bureaucratic phenomenon which came to gain functional prominence as a supplemental mechanism, as a correction to the perceived management failures and inadequacies in the traditionally established structures (the academic management system, in the form of heads of departments, deans and the governing professoriate, with their notorious sectionalist propensities and unfounded arrogances). How difficult it is for the chief of the university to weld these quasi-autonomous Liebnizian 'Monads', as it were, into a system-oriented management functionaries is a common place experience. Therefore, it has become a functional necessity for modern university Vice-Chancellors to separately organise compliance elite groups and strengthen midget bureaucratic structures, which are both dependable and effective.

In the light of the above, it is clear enough that more complex and defiant the management issues, more is the tendency of the chief to search for suitable talent, competence and reliability. A reconfiguration of identified personnel with power redistribution is the inescapable consequence. Second, more the need to deal with diverse groups (student groups, 'arrogant' academics,

union leaders, karamcharis, subordinates, government men and interfering 'outsider') more is the tendency to form separate (other than the established ones) support groups with combination skills. Third, systems which are highly crisis-prone and violence-prone tend to respond to situations and issues in more non-formal and non-traditional ways. The midget bureaucracy is one such way of responding to management-issues involving crisis and open confrontation. Fourth, a tenure-based chief whose occupancy of office is by itself a constraint would not only like the system to be a going concern but wish to transfer minor and medium type crisis situations to dependable shockabsorbing mechanisms like the midget bureaucracy. That way, more the number of campus revolts and protest articulations, greater is the need for midget bureaucratic type of machinery. Fifth, greater the exposure of the university system to outside forces and influences, greater would be the need to strengthen and utilise midget bureaucracy. Finally, there is growing recognition among the political elite and elected functionaries that a useful chief of university is he who has the capacity to localise crisis and prevent their being extended from the lawns of the campus to the corridors of the state secretariat. With this kind of disposition among public men and the growing emphasis on management (some times at the neglect of academic work), the chief's roles and responsibilities stand redefined—a competent Vice-Chancellor is a good generalist administrator. It is this way that Vice-Chancellors tend to concentrate on developing and working midget bureaucratic type of mechanisms and demonstrate managerial skills and capabilities, however Mehevillian they may be. The fast changing roles of the executive heads and the growing primacy of sub-systems like midget bureaucracy, no doubt, calls for an agonising reappraisal of the basic policy postulates of higher education in India.

A conclusion that appears almost inescapable is that a management executive subsystem such as the midget bureaucratic structure should be given some formalisation and legally distinctive existence. If the growth of midget bureaucratic phenomenon is one of the outstanding examples of natural response of a 'self-correcting organisation', it is sensible enough to recognise it as a necessary item discharging a vital function in the system. Then, it is important to note that the negative elements noticable in the fluid growth process of midget bureaucracy are amenable to correction by way of injecting suitable doses of formalisation and restructuring. That modern Indian universities have languished, for long enough, under old stereotypes of medieval educational avocation and counter-productive old traditionalism will be more clear even to a moron. A complex educational enterprise needs its own distinctly organised executive structure and a cadre of trained personnel. There is, today, substantial manpower in the middle and lower level academia which could be selectively segregated, trained and employed in suitable midget bureaucratic positions. Among many advantages of such a reorganisation, mention should be made about the new recognition that would accrue to executive talent, as a specialisation, among the academics. If good teaching and excellence in researching have to be given their due prominence, executive

talent as a distinct specialisation and as the third important category, deserves its rightful place in university governance.

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The Role of the University Grants Commission in Framing the Policy of Higher Education*

A. MATHEW

The University Grants Commission was established in 1956 as a Statutory body for coordination and maintenance of standards of University and higher education. During the first decade of its existence the Commission's major focus was on the implementation of the programmes initiated and sponsored by the Ministry. During this period, the role of the UGC in the formulation of policy measures was minimal. In contrast, from the IV Five Year Plan onwards, one may observe an increasing role played by the UGC in determining the national framework, the pace and direction of growth and the strategies and priorities of development of higher education.

This changing role perception of the UGC may be seen as a result of two factors: (i) a change in the Ministry's approach towards UGC; and (ii) a change in the nature of involvement of the UGC in relation to its Constitutional functions of coordination and maintenance of standards. This paper attempts to study the changing perceptions of the role of the UGC vis-a-vis the Ministry over the last two and a half decades. The primary concern of the paper is to discern the dynamics of organisational changes resulting from the changing perceptions of the role of the UGC. It is argued that this change in the UGC's perception of its functions is a result of the Ministry's approach towards higher education in general and to the UGC in particular. This policy of the Ministry towards the building of an organisation is described as a policy of institutionalisation, a characterisation explained in detail later.

*This paper is a part of the study entitled "The Organisational History of the Ministry of Education", which is in progress. Prof. Moonis Raza is the Director of the Project and Prof. K.N. Panikkar is the Honorary Consultant. Viewed mainly as a part of the Ministry's role in the field of higher education, this paper presents the role of the UGC essentially in relation to the role of the Ministry rather than as an independent organisation. The author wishes to acknowledge the helpful suggestions made by Prof. Moonis Raza, Prof. K.N. Panikkar, Dr. N.V. Varghese, Dr. J.B.G. Tilak, and Dr. Amrik Singh.

The policy of institutionalisation was conceived in part for the fulfilment of the major constitutional function viz., coordination and determination of standards in higher education. Both in nature and functions, the UGC is different from other organisations like the ICSSR, ICHR and the ICPR.¹ These latter organisations were established with a limited purpose of promoting some specific activities of the Ministry. Promotion of research in special fields is a function of the Union Ministry of Education and these organisations fulfil a part of this responsibility of the Ministry. These are autonomous institutions.

The UGC is different both in character and functions. It was conceived as a professional arm of the Ministry for the discharge of the constitutional functions of the Central Government, viz., coordination and maintenance of standards in higher education. Hence it was established as a statutory organisation, whose guidelines and recommendations were binding in nature.² However for purposes of perception of its functions, the UGC was also made autonomous. Such autonomy was considered essential in view of the highly professional and academic expertise needed to perceive programmes and activities in fulfilment of coordination and maintenance of standards. This was why it was made statutory and autonomous and not a subordinate organisation of the Ministry. Both in terms of the functions devolved and the magnitude of the financial outlays of the Central Sector channelised through it, the UGC serves a case for a study of the policy of institutionalisation of the Ministry³ as well as the Ministry's approach to other purely autonomous organisations and institutions.

The Role of UGC during First Two Five Year Plans

The problem of reform and reorganisation of university and higher education were carefully considered by the University Education Commission 1948-49. The reconstruction of university and higher education in post-Independent India was based upon the recommendations of this Commission. One of the principal recommendations of the University Commission was that a Committee or a Commission be set up for; (i) allocating capital and recurring grants to universities and colleges made available to it by the Central Government; (ii) for taking steps in consultation with the universities for the promotion and coordination of university education; and (iii) for determining and maintaining a standards of teaching, examination and research.^{3a} An adhoc UGC began to function in 1954 and early in 1956 Parliament enacted that UGC Act, which set it up a Statutory body.⁴

During the First Five Year Plan neither the role of the Centre crystallized nor the Plan-outlay for the Central Sector in higher education was adequate⁵ enough to initiate any major programme to reorganise higher education. The Centre's role during 1951-52 to 1955-56 was limited and pertained to : (i) communicating to State governments those recommendations of the University Commission whose implementation lay within the States' jurisdiction, (ii) taking up for immediate implementation measures falling under

the Centre's purview and those which did not cost heavy expenditure, and (iii) organising the UGC.

The pressure for expanding college education⁶ without making adequate provision for ensuring quality of teaching had been widespread and persistent. This quantity-quality conflict had rendered more complex the task of re-organisation of University education. The first task of the Government of India and the Union Ministry of Education during the First Five Year Plan was therefore to make some efforts to reconcile the competing demands between expansion and maintenance of standards.

It was only during the Second Five Year Plan that the thinking of the Central Government in the Union Ministry of Education crystallized. This clarity of purpose became clear from the emphasis laid on promotion of university and higher education with a special emphasis on Post Graduate studies and Research in scientific and technical education, and secondly on improvement of standards of college and university education.⁸ It also included various programmes of developmental assistance to universities and colleges and measures for quality improvement. However, from the point of view of the organisational relations between the Ministry and the UGC, the schemes of assistance introduced during the II Plan and the manner of their implementation would be significant, for, as would become evident, the Ministry introduced the programmes and the UGC implemented them.

During the II Plan, the programmes initiated and introduced by the Union Education Ministry were : (i) the Three Year Degree Courses in Indian Universities and Colleges ; (ii) General Education Course; (iii) Evening Colleges; (iv) Loans for construction of hostels to institutions and colleges not covered by the UGC; and (v) National Service by Students.⁹ The academic objective of the 3-year degree course scheme was to ensure that certain uniform basic standards of education at the university level are laid, achieved and implemented. Associated for implementation, the UGC used this scheme to provide an opportunity to improve the staff-strength, raise teacher-pupil ratio, lecture room accommodation, purchase of books and equipments. Other schemes which the UGC made good use of for restructuring and improving the standards of university education included the introduction of the General Education Courses for the first degree in Indian Universities¹¹, the Evening Colleges and the scheme of giving loans for construction of students' hostels.¹²

For implementing the programmes of the Ministry, the UGC evolved its own mode of operation. The grants-in-aid were decided on the basis of the recommendations of its Reviewing Committee and the Scrutiny Committee which considered the recommendations of the Visiting Committees.¹³ While these grants were meant more for the structural development, the schemes of assistance through the 3-year degree courses, and the general education courses aimed at improvement of standards of higher education.¹⁴

The focus of the II Plan was also directed towards the improvement of higher education. For improving the quality and reducing the wastage and stagnation, a number of programmes and measures were evolved and im-

plemented by the UGC. These included, under the introduction of the three year degree courses, organisation of tutorials, improvement of buildings, libraries and laboratories, provision of hostel facilities, stipends for meritorious students, scholarships for research and increase in the salary scales of University teachers.¹⁵

The objectives and programmes already pursued by the Ministry and the UGC formed the basis upon which new objectives and programme oriented proposals were made by the Five Year Plans.¹⁶ Thus it was in the light of the prevailing programmes followed by the Ministry and UGC the Third Draft Five Year Plan envisaged the future projection of expansion of enrolment growth. Some of the new thrusts were on the links between the output of higher education and the vocational requirements of manpower, scientific education and research, research in problems affecting higher education and its all-India character, improvement of affiliated colleges, teachers' welfare and other related issues.¹⁷ The concrete programme-oriented proposals of the Third Draft Plan showed a close correspondence between the prevailing programmes and the proposals in terms of scope and coverage or in terms of change of emphasis. For example, given the likely increase of enrolment by about 4 lakhs at the university level during the III Plan, the programme of providing facilities for expansion was expected to naturally engage the attention and to absorb a lion's share of the resources¹⁸.

In view of the expansion envisaged, it became necessary to provide for an increase in terms of outlay for the infrastructural academic and physical facilities. Provision for a greater impetus for P.G. studies and research, greater facilities for hostels for students, staff quarters, scholarships and loans etc. had then become an integral part of both expansion and quality improvement. As for the change of emphasis it was evident in the proposal for additional scientific personnel when the Draft Plan proposed "to increase the intake capacity of the science courses at the degree level, if the mounting requirements of scientific personnel, including teachers for schools and colleges are to be met".¹⁹

During the II Plan it was the Ministry which initiated the major programmes for reconstruction of university and higher education. The UGC, during initial stages, took the lead from the Ministry in implementing the programmes such as the 3-year Degree Course, the General Education Courses and academic and physical facilities for the improvement of education.

In contrast, during the III Plan Ministry's direct role became one of envisaging, on its own, the areas of new emphasis, such as science education and research, as well as articulating programmes with greater thrust and larger outlay. The latter pertained to schemes such as provision of academic and physical facilities in universities and colleges to sustain standards. This became possible as a result of transferring certain responsibilities to the UGC.

The entire work relating to the implementation of the 3-year Degree Course which the Ministry initiated during II Plan and the entire outlay for the implementation of this scheme was transferred to the UGC with effect from April 1, 1960.²⁰ Other schemes of the Central Sector entrusted to

the UGC for implementation included correspondence course, National Institute for Women, Assistance for publication of University text books, educational conferences, exchange of professors and delegations.²¹

The reflection of the III Plan emphasis in UGC's programme articulation would be obvious from an enumeration of its schemes of assistance. These included the building up of library, purchase of books and journals and scientific equipments to help teaching and research, establishment and improvement of printing presses, guest houses and staff clubs, university chairs, university hostels for women, staff quarters, assistance for the 3-year degree courses, assistance to universities for utilisation of the services of retired teachers, and research seminars and summer schools.²²

It is important to note the nature of the transformation in the UGC's role during the III Plan. During the first five years of its existence, the UGC's efforts were more in the direction of feeling its way in fulfilling the constitutional mandate entrusted to it viz., coordination and maintenance of higher education and research. The major part of its energies was directed to implementing the programmes already initiated by the Ministry which were included in the Central Sector. Programme perception and formulation of policy-reform measures for reorganisation of the courses, restructuring of the contents and quality improvement efforts were relatively limited. As against this, the UGC's role during III Plan began to enlarge.

The first aspect related to the transfer of the responsibility of implementation of programmes sponsored by Ministry to UGC.²³ The second aspect related to UGC's self-articulation of programmes in response to the new priorities embodied in the III Plan. The specific programmes to promote science education, the launching of the scheme of Centres of Advanced Study, Revision of salary scales of University and College Teachers etc. are illustrations of the programme perception function of the UGC.²⁴

There were certain other programmes in which there appeared an overlap between the implementation and articulation functions as seen from the increased importance attached to them by the UGC. These were student services, construction of hostels (initiated by the Ministry during the II Plan) and support to SC/ST students in admissions and educational facilities.

From Association to Self-initiative: UGC in Policy Formulation

From the point of view of the organisational growth the UGC's role in the formulation of policy is important for, this represents what can be called the process of maturing of the conceptual and functional role of the UGC. It was the Ministry which appointed the important committees to study and suggest measures for reorganising university and higher education during the II plan.²⁵ The UGC's association was very limited. Some of these were: the Committee to examine the question of delinking degrees from jobs (1955), the Committee on Rural Higher Education, headed by Dr. K.L. Shrimali (1954), The Visiting Study Team to study organisation of General Education in UK and USA (1956), the Committee to work out the estimates

of the introduction of the Three Year Degree Courses (1957), the Committee on Student Unrest (1959), the Committee on Emotional Integration (1959), the Committee on Examination Reforms (1958). Only in one of these, namely the Estimates Committee of the 3-year Degree Courses was the UGC involved.

During the III Plan however, it was the UGC which finalised the development grants to university as reviewed and scrutinized at the national level by its Reviewing and Scrutiny Committees.²⁶ This exercise as seen earlier, was based on the reports of the Visiting Committees (to the universities). Similarly the question of restructuring the syllabus prescribed by Indian universities and the revision of syllabuses for the 3-year Degree Courses were examined by (Subject) Expert Committees appointed by the UGC. Besides, during the III Plan the UGC appointed an Expert Committee whose recommendations formed the basis for launching Centres of Advanced Study and the establishment of the P.G. Studies. Student Services and Revision of Salary Scales of University and College Teachers were based on the UGC appointed committees such as on Living Standards of University Students (1961).²⁷ It is evident that the practice of consulting expert academic opinion in the country was beginning to be built into the UGC's programmes.

Two aspects emerge from UGC's role during III Plan. Firstly, even in implementing the programmes of the Central Sector, the UGC began to articulate them in such a manner as to reflect the emphasis embodied in the five year plan. Besides, the UGC began to perceive programmes on its own to achieve plan priorities. Secondly, the Commission began to initiate policy measures affecting both development and quality improvement of higher education. This development needs to be understood not as an independent phenomenon but as a product of a deliberate policy of the Union Ministry of Education.

The mandate in terms of policy guidelines for the UGC's functions invariably came from the Union Ministry of Education on behalf of the Central Government. Sometimes it even included specific aspects which it was called upon to examine. One such instance was that the UGC was asked to examine the question of introduction of the regional languages as medium of instruction at the university level during 1958-59. But the examination of the problem, and the articulation of the desired measures was left to the UGC, the full working of which coincided with the III Plan. For instance the Commission appointed a Working Group to study the adoption of regional languages, which reported during 1960-61²⁸. But as regards implementation of the Ministry's programmes, upon transfer of the Correspondence Course to it, the UGC appointed an Expert Committee to work out the details of this scheme. In response to the stress on student welfare in the III Plan, the UGC appointed a Committee on Living Conditions of Students in Universities, whose recommendations formed the basis for a greater increase in student services during the III Plan. As compared to the practice of Ministry convening the Education Ministers' and Vice-Chancellors' Conferences during the II Plan,

the UGC became a co-sponsor of such conferences during the III Plan. Thus the role of the UGC as an organ of the Ministry in conceiving and articulating programmes and formulating policy measures in fulfilling coordination of development and determining and maintaining standards of higher education and research increased from II to the III Plan.²⁹ But inasmuch as this was a deliberate policy of the Ministry, this also portended a change in the ministry's role.

Change in Direct Role of Ministry : From Initiator to Guide

Beginning from III Plan the role of the Ministry as a direct sponsor of the programmes decreased in terms of numbers, but certain other dimensions emerged more clearly. While many of its II Plan schemes were transferred to the UGC, the Ministry identified newer areas of interest. The UGC was entrusted with the function of operationalising the programmes included in the Central Sector and also of evolving programmes on its own in relation to the Plan priorities. The Ministry was free to touch upon far more fundamental problems relating to higher education and the UGC moved slowly to become a partner in policy making. First, midway during III Plan the Ministry began to work out a perspective Plan for next 15 years through a Working Group. The Ministry appointed two Committees to study and whose reports led to the establishment of the two Central Universities, JNU and NEHU. It appointed a Committee of MPs. on Higher Education in 1963. A seven Member Committee was appointed in 1963 to work out a Model University Act for Indian Universities. The momentous Education Commission was appointed by the Ministry in 1964 which reported in 1966. It is true that the UGC was closely associated in the appointment or the actual working of these committees. But it became possible for the Ministry to provide the lead in the matter only as a result of freeing itself from the task of operationalising the programmes which were transferred to the UGC.

Thus the twin aspects which appear central to the role of the Ministry and the UGC are: (i) the increasing delegation of the programme perception and implementation to the UGC and concentration on examining more vital issues of higher education by the Ministry; and (ii) a change from a position of associating for programme implementation and policy formulation to directly handling these by the UGC itself. To understand this process, it would be convenient to study the UGC's role in relation to programme perception and policy formulation successively. A study of its activities during the III Plan reveals even more clearly the process of assuming increasing direct role by the UGC in designing programmes and measures in relation to the function of coordination and development and maintenance of standards of higher education and research as compared to the II Plan period.

From Implementation to Perception and Articulation: UGC's Activities during 1961-68

During the II Plan the limited funds at its disposal were given for improving the infrastructural facilities, for the promotion of university and

higher education, the facilities for research and development of affiliated colleges. The programmes of assistance for the improvement of the quality of education evolved and implemented during II plan continued III plan as well. These included assistance to colleges to improve facilities for teaching and research, revision of the salary scales of university and college teachers, assistance for improving the academic and physical facilities like class room accommodation, library and laboratory buildings and books and equipments, publication grants. Measures calculated to reform university education like Examination reform, student unrest, emotional integration, curricular reforms, introduction of the 3-year degree course, and organisation of general education in universities, facilities for research and P.G. Studies, programmes of scholarships, medium of instruction etc. evolved and implemented during II Plan continued during the III Plan as well.³⁰ However, within the developmental programmes as a direct response to the Plan priorities, the UGC laid a greater stress on programmes of quality improvement and programmes of Science and Technology education.³¹ For example, University Departments concentrating on P.G. Studies and research, and development of Engineering and Technology education in universities and purchase of books for libraries—all these activities received 100% assistance from UGC. Universities with Departments engaged mainly in P.G. teaching but with some undergraduate courses received 2/3rd of non-recurring cost, and so was construction of buildings. Departments engaged in undergraduate work mainly were entitled for 50% assistance.

Articulation of the already existing programmes of assistance in a manner of reflecting more clearly the plan priorities was one kind which could be called programme articulation. But designing new programmes to embody and reflect plan objectives is another kinds which could be seen as programme perception. The Centres of Advanced Study launched by the UGC during the III Plan is an example of programme perception. The UGC's understanding of the contribution by and hence its emphasis on the Centres of Advanced Study is best exemplified by the Education Commission's endorsement when it said :

What is needed most to bring about a radical improvement in the present situation is a vigorously *selective approach*, a concentration of efforts to build centres or peaks of excellence.....When resources are scarce and problems formidable, the principle of concentration and selectivity becomes all the more imperative.³²

Faced with the problem of limited resources for quality improvement in the face of mounting demand for higher education and the resultant drag on standards, the only possible way out appeared was the establishment of the Centres of Advanced Study on a selective basis. In fulfilment of the III Plan emphasis on consolidation and improvement of quality, especially at the P.G. and research level, and on the recommendations of the Standing Advisory Committee (under Prof. A.R. Wadia) the Commission initiated the

scheme of the Centres of Advanced Study during 1961-66 in 30 selected Departments.³³ 17 of these were in Science subjects others being in Humanities and Social Sciences. The 'pursuit of excellence' achieved in these Centres was expected to be ploughed back into the mainstream of higher education.

In retrospect, the III Plan and the three Annual Plans (1966-67 to 1968-69), mark a turning point in regard to two aspects. Firstly, the role of UGC was transformed from one of being associated for implementing the programmes in the Central Sector initiated by the Ministry to that of being entrusted with total responsibility for articulating programmes of higher education on behalf of the Ministry's. Secondly, it began to perceive programmes on its own in close correspondence to the plan priorities.

As far as the Ministry is concerned, there appears an increasing involvement of the UGC for the operationalisation of its programmes and to the degree to which it became free from direct sponsorship of programmes, the Ministry began to take up even more fundamental aspects relating to higher education. How did this process continue during the 70s—the IV and V Plans could be seen below.

Role of UGC during IV Plan: Significant Transformation

The objectives of the fourth plan in brief were:

consolidation and improvement of quality in higher education;

development of P.G. education and research in universities;

Improvement of science and technology education and research organised on interdisciplinary basis to serve economic needs;

concerted efforts to improve student amenities;

increase of evening colleges and correspondence courses;

large-scale programme of teacher education; and

pilot programme on Adult education.³⁴

The first aspect about these objectives is the continuity; these objectives were stressed by the Draft Fourth Plan prepared by the Ministry of Education during 1965-66 although it was not introduced, the Report of the Education Commission and the National Policy of Education (1968). Secondly except for the thrust on Adult Education and on the harnessing of scientific and technological education and research, organised on interdisciplinary basis to serve the economic developmental needs, all other aspects represented a continuation of the earlier plan priorities pursued by the UGC. However, the articulation of the programmes in relation to the plan priorities and the programme perception are significant from the point of view of the role of UGC. The latter role is decidedly more important than the former, for, the former gave the UGC a qualitatively new image in relation to the discharge of the constitutional task of coordination and determination of standards of higher education. The programme perception role could be examined in some detail.

Special Programmes of UGC during IV Plan

In line with its policy of meeting the requirements of expansion by establishing and developing P.G. Centres in preference to opening new universities,³⁵ and in response to the 4th Plan stress on consolidation, the UGC adopted the policy of encouraging Centres of P.G. studies and research. This, along with the programme of Centres of Advanced Study were conceived to usher in a turning point in the quality improvement of university education. It was however in the programmes introduced at the college level that the UGC's programme perception for translating the national goals of quality improvement in higher education stood out in marked contrast to those pursued during earlier plans.

During the II and III Plan periods, the pattern of assistance to affiliated colleges was weighted more in favour of improving structural academic facilities, which was in the nature of expansion. The programmes for quality improvement were limited and pertained to the introduction of the 3-year degree courses and related measures. But the programmes perceived for quality improvement registered a significant increase during the IV Plan.³⁶ Thus the Special Programmes introduced since the Fourth Plan were the College Science Improvement Programme (COSIP), and College Humanities and Social Science Improvement Programme (COHSSIP), University Leadership Project, Autonomous Colleges, Lead Colleges etc. An organisation conceived and brought into effect in 1956 for coordination and maintenance of standards appears to have reached a matured stature in the 1970s, both in terms of perception and implementation of the programmes.

Added Emphasis on Continuing Programmes

Even in continuing programmes there was a marked tilt of emphasis towards consolidation and improvement of standards. In the matter of development of universities, the UGC stressed more on programmes of consolidation and improvement than programmes of expansion. General development and expansion of university and colleges received low priority, not more than 50 % assistance from UGC. But in the programmes calculated to bring about qualitative improvement in standards, the Commission increased its assistance considerably. Thus during the IV Plan, as against the 50 % central assistance during the II and III Plans, the Commission sponsored 2/3rd of the approved cost on development of P.G. Studies and provision of academic facilities.³⁷ Similar was the emphasis on programmes of student services and teacher status and teacher education.³⁸

The manner in which emphasis was laid on quality improvement appears as significant as new programmes and measures introduced directly for improving standards. As an example of weighting the emphasis of a continuing programme, UGC's approach to teacher education and teacher status could be examined in some detail.

There appears a greater appreciation of the importance of raising the quality of teachers to improve the quality of education. Enhancing the social status and esteem of the teachers through improvement of salary scales was a consistent measure followed by UGC to effect quality improvement in higher education.³⁹ Academic opinion was unanimous on this point whenever the UGC referred this question to them. Based on the recommendations of the Committee on Governance of Universities (1969), known also as the Gajendragadkar's Report, the UGC had accepted the three scale upgraded salary scales for university and college Lecturers, Readers and Professors in 1973 which still prevails.⁴⁰

Similarly, the programmes of support for research pursued during the fourth plan stands in marked contrast to the earlier plan programmes. Research support for individual teachers for undertaking research with an annual grant of Rs. 5,000 covered more than 7,000 teachers during fourth plan.⁴¹ Other schemes like the National Fellowships, Professorships and Associateships, initiated during the 4th plan afforded opportunities to a large number of outstanding teachers and scholars to improve their professional competence as well as to provide an opportunity to the institutions visited by them to benefit by their scholarship.⁴²

Policy Measures: Total Initiative by UGC

It was noted earlier how in the perception of policy measures the UGC was totally guided by the Ministry during II Plan. It was also observed that in this regard the III Plan period marked in a way a turning point. On all vital problems relating to development and coordination of university and higher education, the Commission had evolved independent thinking based on expert academic opinion in the country. And the Commission's guidelines in respect of its programmes of assistance represented a reconciliation with the national plan priorities. These received a further refinement during the IV Plan. Another aspect which was built into the UGC's function of initiating policy measures was the practice of review and assessment of its programmes of assistance and quality improvement programmes.

The Commission's approach to the question of Examination Reform is another instance of its independent approach and initiative.

Examination reform was a continuing concern of the UGC on which its thinking emerged quite clearly during the sixties.⁴³ Examination reform units set up in the Central Universities was a product of considerable thinking relating to objectivity of standards of evaluation, admission procedures, internal assessment, spacing of examinations, classification of successful candidates, the efficacy of objective tests and viva voce etc.⁴⁴

However, there appears a difference within the UGC's approach to examination reform before and after the 4th Plan. The efforts in relation to examination reform before the 4th Plan was aimed at bringing about a reform in the system of testing and evaluation to make it more objective and reliable. But the focus of its efforts during the 4th Plan and later represented a step

forward in not merely reforming the system of examinations, but making structural changes in the educational system itself. This was the introduction of a series of measures like the Semester System,⁴⁵ continuous internal assessment, the system of grading etc. These measures were conceived to be integrally linked to teaching and learning alike. Whether viewed from the point of view of programme perception or from the angle of initiating, policy measures, the UGC appears to have been reaching a stage of independent thinking and approach during the 4th Plan.

One of the most important steps initiated by the UGC during III Plan, but fructified during the IV Plan to effectively discharge its task of coordination and maintenance of standards was the amendment of its Act. In the section dealing with III Plan it was noted how despite its repeated reiteration for restraint, there was unchecked proliferation of universities and colleges as well as enrolments. This menace of expansion neutralized whatever efforts that the UGC made to sustain standards in higher education. This was why it favoured the selective admissions in preference to the open door policy during the III Plan.

However, on finding that neither its plea for prior approval, as provided for in its Act was sought for by the State Governments in opening new universities, nor the regulation of enrolments seriously was enforced, the Commission requested the Government of India in 1966 to amend its Act to make its concurrence conditional for recognition and assistance.⁴⁶ The Amendment initiated in 1966, came finally into effect in 1972.⁴⁷ Largely as a result of this measure, the UGC could report a decline in the growth rate both of universities and colleges and enrolment during the fourth Plan.⁴⁸ It is evident that the UGC's role in coordination had changed from one of plea and reiteration for restraint as during the I and III Plans to that of authority to be able to check expansion and regulate enrolments in the IV Plan. During the sixties the Ministry had to intervene on its behalf to write to the States to adhere to UGC's advice for opening new institutions. During the 70s, and especially during the latter half, the UGC could embody these objectives in its guidelines for programme assistance with which the universities and colleges had to comply with if they wanted UGC's assistance, which was after all their life nerve of existence.

From Programme Perception to Priority/Policy Determination UGC: during V Plan

The most significant feature in UGC's functional tradition during the four five year plan periods was the change from a mere implementing agency of the Ministry to one of perceiving programmes on its own in response to national priorities in higher education. In the matter of policy formulation, the UGC had moved forward from collaboration to increasing independence. The Fifth Plan marked a step forward in this direction. The UGC had evolved its own plan mechanisms to work out the details of the national objectives. Keeping in view the overall national objectives, the UGC determined, through

its Planning Group, its own priorities and programmes for the Fifth Plan.⁴⁹ According to these objectives and priorities, the UGC had worked out the mechanism of operationalising them in specific programmes.

Some details of the UGC's guidelines to universities regarding their development during Fifth Plan may be useful to discern the measure of independence of approach in its functioning. Subject to the priorities embodied in its guidelines and the constraints of resources, the Commission advised the universities to classify their plan priorities into three categories. This classification was to represent the utilisation of its assistance in the pattern of 50, 25 and 25 % respectively in order of priority. The emphasis on developmental activities was very low, such as construction programmes. On enrolment, considerable restraint was imposed on expansion of formal and full-time courses, particularly at the undergraduate level. But a substantial expansion was encouraged on part-time, own-time education and correspondence courses or evening colleges.⁵⁰

The full dynamics of reflecting priorities in the development of higher education stands marked from the manner in which the Commission articulated its programmes. During the V Plan, the Commission had divided its programmes of assistance into two categories. The first category related to programmes of development of university education for which the latter were required to formulate proposals, closely relating to the UGC's guidelines.⁵¹ The second category belonged to those programmes which UGC initiated on a selective basis. Other important programmes about which UGC evolved new guidelines included extension, inter-disciplinary approach, inter-institutional collaboration, removal of social and regional disparities etc.⁵²

In regard to continuing programmes, UGC's efforts during the V Plan related to shifting the emphasis from general expansion—in fact with a severe restraint on it—to quality improvement⁵³. And in regard to new priorities introduced, the UGC's endeavours were directed even deeper towards the content and courses of university and college education. This is seen from the measures it took up for restructuring courses which had two vital components viz. (i) to make the degree courses more relevant to rural environment and to the development needs of the community; and (ii) to link education with field work, practical experience and productivity.⁵⁴ Especially in regard to the colleges in rural areas, serving the needs of weaker sections the Commission even relaxed the minimum conditions for assistance regarding the number of students on enrolment and the number of permanent teachers on the staff.⁵⁵

The dominant feature which characterises UGC's role during V Plan, is the adoption of an independent approach in formulating the strategies and priorities in relation to the national objectives. Coinciding with perception of programmes on behalf of the Education Ministry and in relation to a five year plan emphasis, the Commission had also assumed another function. This was the practice of review/feedback, monitoring and evaluation of its programmes being built in the very plan itself. For example,

every programme for which the Commission extended grant-in-aid was based on the opinion of a Committee or a Group, composed of eminent academicians in that field to advise the Commission. This system was institutionalised towards the end of the IV Plan with the introduction of the Standing Advisory Committees, with an addition of review and feedback of the programmes introduced by it. The Fifth Plan went one step higher by instituting accountability, a mechanism of continuous monitoring, besides the final and midterm evaluation and feedback.

UGC's Vision for 10-15 Years Ahead since 1978

Essentially, the independence that was seen in UGC during the V Plan was limited in the sense that its plan priorities were not totally independent of the planning exercises or the goals envisaged at the national level by the Ministry or the Planning Commission. There appears perhaps a fundamental departure in this regard during the VI Plan. For the first time in its history of 22 years, the UGC came out with "The Policy Frame for the Development of higher Education in India over the Next 10-15 years" during 1977-78. Diagnosing the past achievements and failures, UGC proposed a broad strategy for the development of higher education, laying special stress on the concept of extension, social change, equalisation of educational opportunities and removal of regional imbalances, maintenance of standards, and social relevance of courses and research.⁵⁶ To work out these strategies into concrete programmes, the commission appointed Working Groups in respect of extension, evaluation of colleges, democratising educational opportunities while regulating enrolments, introducing regional languages as medium of instruction.⁵⁷

Based on this long-term perspective, the Commission had also worked out an "Approach to the Plan Period 1978-83".⁵⁸ The main focus of its programmes of assistance for the VI Plan period was directed towards improvement of quality, making extension an integral part of the university and college system, and imposing a severe restraint on expansion.

The Commission's approach to the development of universities differed from the earlier plan in point of clarity and precision. The approach to the development of universities spelt out the limits to their growth in size, the need for qualitative improvement and development of viable schools of teaching and research in the selected areas and to remove regional imbalances. Based on the profiles of individual departments, prepared by the Subject Panels of the Commission, the universities were grouped under 3 categories of 'well-developed', 'developing' and 'universities which have the potential to reach the well-developed stage in the next five years'.⁵⁹ The assistance to "well-developed" universities and departments was directed more towards quality improvement programmes and research on the basis of a well-defined and time-bound programmes with specific academic accountability. The purpose of quality improvement and research thrust to the "well-developed" universities was to harness their academic potential for

the improvement of the “developing” universities. The assistance to the “developing” departments was aimed at nurturing their potential to an optimum level essential for maintenance of proper standards. The Commission’s approach towards the “universities and departments which have the potential to reach the well developed stage” was to identify some of the “critical inputs and academic guidance”.⁶⁰ This approach to development of university education was also blended with a policy of forging strong links between the ‘developed’ and ‘developing’ universities in each State which render possible greater coordination, mutual collaboration, avoidance of duplication of efforts and prevention of setting up unviable departments, and promotion of student mobility.⁶¹

The Commission’s approach to the assistance of colleges also was based on similar considerations. The Colleges’ eligibility for assistance was linked to their student enrolment and the number of permanent teachers on the staff. Subject to this eligibility, the Commission gave assistance to building up their libraries for purchase of books and journals, improvement of laboratory facilities for under-graduate courses, for faculty improvement, through refresher courses, workshops, summer institutes or working towards advanced degrees like M.Phil. or Ph.D. with the help of teacher fellowships. The philosophy of the matching grants of the 60s was replaced by 100% assistance from the Commission for these purposes. Besides, the Commission also proposed to give assistance to quality improvement programmes, such as COSIP, COHSSIP, Support for Research Project, Lead Colleges, Autonomous Colleges and Colleges in Educationally backward areas.⁶²

Coordination and Maintenance of Standards

The *raison d’être* of the Commission’s establishment and existence was to achieve coordination and maintenance of standards in higher education and research. In this regard, the UGC was given an additional task of tuning its programmes of assistance in accordance with the changing emphases of the national plans. The resources placed at its disposal was always limited for the adequate fulfilment of the tasks assigned to it as seen from the wide gaps between the draft plan proposals or working groups’ estimates and the final outlays. It was under this constraint the Education Ministry and the Commission had to adopt a new policy of selectivity, i.e. for providing for the intensive development of a selected number of university departments and identified colleges to help them to grow into centres of excellence. This was conceived to be the surest means of achieving quality improvement for the ultimate benefit of the entire educational system in the shortest time possible. However, while adopting the policy of selectivity, the Commission was careful enough to provide for the demands of social justice—equality of opportunity to the weaker sections and the educational needs of backward and rural areas. The objectives were national but the translation of these objectives into concrete programmes was the UGC’s task. The lead in the matter was initially provided by the Ministry. But the UGC gradually

began to take up the initiative on its own to echo and vibrate the plan emphasis in the programme perception. This roughly appears to explain the UGC's role upto the end of the IV Plan.

The V and the beginning of the VI Plans mark another significant development in UGC's functions. From implementation to articulation and from articulation to programme perception characterised the growth of UGC's role till the IV Plan. Evolving its own framework of the five year plan of development of higher education was noticed during the V Plan. This represents the new thinking that coordination and maintenance of standards in higher education involves not mere implementation of programmes of assistance for consolidation and improvement. It involves, even more crucially, coordinated educational planning, basic changes in the structure and process of educational system and restructuring of courses to reflect social needs as it changes. These are policy measures concerning the total structure and standards of higher education. It is in the field of determining policy measures that the UGC appears to have grown considerably.

Conclusion

The Government of India established the UGC as a Statutory and autonomous body to perform the constitutional function of coordination and maintenance of standards. A change is discernible in the role of the UGC during the first decade of its existence as compared to the IV and V Plan periods.

As a constituent organisation of the Ministry, initially UGC was only an agency which implemented the programmes drawn up by the Ministry. Beginning from the Third Plan, UGC was entrusted with the complete responsibility of implementing the programmes envisaged by the Ministry. From the Fourth Plan onwards, the UGC was given the freedom to perceive and articulate the programmes by itself. In this sense, the UGC became more autonomous from the Ministry from its initial phase of being directly under the guidance of the Ministry. From the V Plan onwards, the UGC not only began to evolve the strategies and priorities of higher education in relation to the plan emphasis at the national level on its own, but it also worked out the programmes to achieve the objectives of higher education. This shows a transformation in the functions of the UGC from working directly under the guidance and control of the Ministry to an agency relatively autonomous, perceiving and carrying out programmes, but within the broader objectives of the Ministry and the national plans. This organisational change resulting from the functional requirements of the Ministry whereby new organisations are set up for carrying out educational activities is a product of the policy of institutionalisation. And what is argued in this paper is, that the organisational changes that took place in UGC can be seen as a part of the process of institutionalisation followed by the Ministry.

References

1. These refer to the Indian Council of Social Science Research (1969); Indian Council of Historical Research (1972) and the Indian Council of Philosophical Research (1977).
2. Some of the provisions in its Act which bear the impress of authority are cited below:
 - (a) The Commission could associate with itself any person deemed fit to discharge its duties;
 - (b) The main functions of the Commission was to take in consultation with universities and other bodies, all measures it deems fit for the promotion and coordination of university and higher education and for determination and maintenance of standards of teaching, examination and research in universities;
 - (c) For the discharge of its functions : (i) the Commission could enquire the financial needs of and disburse grants to universities; (ii) recommend to universities measures for improvement of university education, advise Central and State Governments for allocation of grants and on any other matter referred to it; (iii) collect, collate and disseminate information relating to university education in India and abroad; (iv) perform any other function considered necessary for advancing higher education; and (v) cause inspection in universities regarding standards of teaching, exams., and research etc. Quoted in Ministry of Education and Social Welfare, *Report of the Review Committee on the University Grants Commission* (Jan. 1977), (Hereinafter referred as UGC Review Report).
3. Samuel Mathai, "The University Grants Commission", in Amrik Singh, ed., *Higher Learning in India*, p. 26.
- 3a. *Report of the University Education Commission*, Vol. I.
4. The efforts of creating a Central level organisation prior to 1947, as envisaged in the Sargent Report, 1944, the nature and functions of such an organisation as proposed in the Universities (Regulation of Standards) Bill, Introduced the Central Government in 1951, the nature of the interim UGC constituted in 1953—all these are discussed in detail in the *UGC Review Report* (1977) pp. 1-5.
5. During the First Five Year Plan, the number of university students increased from 396,745 to about 720,000. The number of universities increased from 28 to 32 and the affiliated colleges from 695 to 965. GOI, Planning Commission, *Review of the First Five Year Plan* (1957), p. 226.
6. The total allocation for education in the Central Sector for the First Plan was Rs. 169 crores out of which Rs. 15 crores earmarked for higher education. GOI, Planning Commission, *Second Five Year Plan*, (1956), p. 500.
7. *Ibid.*, pp. 501-02; Ministry of Education and Scientific Research, *Annual Report*, 1957-58, p. 40.
8. *Ibid.*
9. *Ibid.*
10. In 1956 the Union Ministry appointed a Committee to work out the Estimates of the Three year Degree Course, under the Chairmanship of the UGC Chairman, C.D. Deshmukh. The report was submitted in May 1957. The Committee estimated the cost to be 25 crores phased over the II & III Plan, and suggested that the Union Government bear 50% of the cost. Getting the Report endorsed by the Conference of Education Ministers which it convened during Sept. 1957, the Ministry began to release its share of 7.5 crores, including 2.5 crores through the UGC during the last two years of II Plan. The UGC worked out the modalities for the operationalisation of the scheme. Ministry of Education and Scientific Research, *Annual Report 1957-58*, p. 40; Ministry of Education, *Annual Report*, 1959-60, p. 46.

11. This scheme began in 1956 when the Ministry sponsored a Visiting Study Team of Indian academics, known as the Bhagwantam Study Team, to examine the organisation of General Education Courses in some of the leading universities of UK & USA. A Team of nine experts from USA was invited to serve as consultants in Indian universities which accepted to introduce the general education. The reports of these groups were discussed in a conference convened by the Ministry in 1957 and it reported that almost all universities agreed to introduce the general education courses. Ministry of Education and Scientific Research, *Annual Report*, 1957-58, p. 39.
12. *Ibid.*
13. Ministry of Education, *Annual Report*, 1959-60, pp. 45-46.
14. *Report of the UGC Review Committee*, (1977) pp. 11-12.
15. *Ibid.*
16. Ministry of Education (GOI), *Draft Third Five Year Plan for Education* (1960), pp. 89-90.
17. *Ibid.*
18. *Ibid.*, p. 99.
19. Ministry of Education, *Annual Report*, 1960-61.
20. Ministry of Education, *Annual Report*, 1960-61.
21. UGC, *Development Programmes sponsored by the UGC*.
22. *Ibid.* For a more detailed account see the respective chapters in UGC, *Report for the Year 1965-66*
23. Ministry of Education, *Annual Report*, 1961-62, p. 18.
24. *Ibid.*, and also see *Ibid.*, 1962-63, p. 10.
25. Ministry of Education, *The Educational Activities of the Government of India* (1963).
26. UGC, *Report for the Year 1965-66*, pp. 28-31.
27. UGC, *Development Programmes Sponsored by the UGC*.
28. The Ministry of Education, *Report for the year 1960-61*.
29. UGC, *Report for the Year 1965-66*, pp. 20-21.
30. Ministry of Education, *The Educational Activities of the Government* (1963) and *Review Report of the UGC* (1977).
31. The UGC, *Development Programmes Sponsored by the UGC*, p. 3.
32. Report of the Education Commission (1964-66), p. 283.
33. UGC, *Report for the year 1963-64*, p. 7; *Ibid.* 1964-65, p. 3.
34. Ministry of Education, *Annual Report*, 1968-69, p. 32.
35. This stand appeared first in the *Interim Report of the Committee on Establishment of New Universities* (1962), a Committee appointed by the UGC, headed by its own Chairman.
36. All these schemes were advocated first by the Education Commission. See its *Report* for a full account of its recommendations.
Detailed accounts of these activities are given in the Annual Reports of the UGC for the Fourth Plan.
See also Min. of Edn. and S.W., *Educational Developments in India* (1971-77), pp. 22-24.
37. UGC, *Report for the year 1969-70*, pp. 13-14.
38. *Ibid.*, pp. 16-17; and *Ibid.*, 1973-74, p. 19.
39. See for instance the *Interim Report of the Committee on the Establishment of New Universities* (1962), Report of the Committee on 'Model Act for Universities' (1964), Report of the Committee on Emotional Integration (1962), Report of the Education Commission: chapter on Teacher Education and Teacher Status, Report of the Committee of M.Ps. on Education, 1967: National Policy on Education, p. 23.
40. Ministry of Education and Social Welfare, *Educational Developments in India* (1971-77) pp. 33-34.
41. *Ibid.*

42. *Ibid.*
43. J.N. Kaul traces the Commission's efforts in examination reform for nearly 20 years in his work, *Higher Education in India* (1951-71).
44. *UGC Review Report* (1977), p. 19.
45. This was embodied in a brochure brought out by the UGC entitled *Principles and Mechanics of the Semester System*.
46. *UGC, Report for the year 1965-66*, p. 24.
47. *Ibid.*, 1974-75, p. 1.
48. *Ibid.*, 1977-78, pp. 2-3.
49. See for instance, *UGC, Report for the year 1975-76*, p. 12.
50. *Ibid.*, pp. 12-13.
51. These related to such programmes as development of university departments of Post-graduate teaching and research, restructuring of courses and revision of syllabuses, provision of academic and physical facilities etc.
52. These included schemes such as (a) COSIP/COHSSIP, (b) Autonomous colleges; (c) Examination reforms, (d) fellowships, (e) individual and departmental support for research, (f) area studies, (g) adult and continuing education, and (j) teacher education and student amenities.
53. *UGC, Report for the Year 1974-75*, pp. 15-18.
54. *Ibid.*
55. *Ibid.*
56. The UGC, *Report for the Year 1978-79*, p. 1. See also the "Summary of the essential features of the Policy Frame for Higher Education and Approach to Development", in *Ibid.*, pp. 24-28.
57. *Ibid.*, p. 24.
58. *Ibid.*, p. 2.
59. *Ibid.*
60. *Ibid.*
61. *Ibid.*
62. *Ibid.*, p. 103.



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The Dynamics of Change

AMRIK SINGH

Aware as I was that my perceptions differed from that of most others, I had to define my attitude clearly as to how I should go about getting my point of view accepted. One option was to use the weight of the office and push things through. The other option was to persuade people to see my point of view and share my thinking and approach. I opted for the second course.

For one thing it is wrong in principle to choose to be authoritarian in a setting which is essentially democratic and where decisions have to be taken through discussion and participation. Universities are usually referred to as communities of scholars, the word scholar covering both students and teachers. The only difference between these two categories of scholars is that one is ahead of the other. He who is following behind is bound to draw abreast of the one who is ahead. Sometimes he may even overtake him and go farther ahead; that is a part of the scholarly game. The sense of belonging to the same community leads to a sense of mutual respect as well as solidarity.

In this setting, if someone chooses to throw his weight about even if he is the academic and the administrative head of the institution this cannot produce lasting results. Others would defer to the authority of the office as long as he is in office but they would not change their views nor give him regard or consideration in personal terms. One can be cynical and say that regard and consideration are transient in character and go with the office. If one is shown consideration today, it does not follow that one would be shown consideration tomorrow when one is out of office. Whatever it be, the

This article is culled from a forthcoming book *Asking For Trouble: What It Means To Be A Vice-Chancellor Today* (Vikas) by Amrik Singh. We believe it will be of interest to our readers Ed.

more weighty consideration is the fact that a university is essentially and unmistakably democratic in ethos. It is therefore preferable to carry people along to imposing anything on the community of scholars.

In any event change imposed from above can never prove to be enduring. I know of several universities where dynamic Vice-Chancellors bulldozed their way through. But that did not bring about the desired change. Most of what they did failed to survive them. Change therefore has to be voluntary and by consent. Anything which is against the will of the people involved does not ultimately get accepted. It gets accepted for the brief duration that the man who imposed it is around. As soon as he disappears from the scene, the reverse process starts. And sooner or later things come back to square one.

It is an ironical comment on my tenure at Patiala that though I did not choose to impose anything and followed the very rewarding process of participatory decision-making, the end result was perhaps not particularly different. From whatever I have been able to gather, so many things that were initiated or implemented during my tenure did not long survive me. Without being personal about it, my explanation for it is different.

Despite whatever I was able to do during those two years, the thinking of people had not changed, nor indeed could it change so easily. It requires a much longer span of time than the two years that I spent at Patiala. More than that, the objective situation too should help in the process of change. I am afraid this did not come to pass and the outcome therefore was not what it could have been.

It was in recognition of the dynamics of changes as I understood it that I evolved for myself a formula which I called the 20+30+50 formula. I believed in 20% compulsion, 30% persuasion and 50% persistence. Without a certain degree of compulsion, the process of change perhaps cannot be initiated. In plain words, the dynamics of change requires somebody to give a push. Without the initial push the chain reaction may not get started at all.

Having given the push however it is wrong to impose anything upon people if they are unwilling to accept the change. They must be persuaded to accept the wisdom of what is sought to be done. In the last chapter I have given a couple of examples. The initiative had come from me but then I had persuaded the others concerned to accept my line of argument. Argument there definitely was on both sides. Several people would disagree with my line of reasoning. This would lead to debate, sometimes so prolonged that no decision could be taken that day and the matter would be deferred to a subsequent meeting. There were numerous occasions when decisions dragged on for weeks together. Eventually my point of view came to be accepted in most cases but on several occasions it was not accepted. I did not choose to press my argument any further.

The next stage of implementation is infinitely more difficult. Getting people to agree to do something requires a certain attempt at persuasion and this is relatively easy. Getting them to act on what has been agreed upon however requires a change of attitude, and that is so much more difficult

In a situation where distinction between performance and non-performance is getting blurred, as stated earlier, the whole thing bristled with extraordinary difficulties. In this context, it was also necessary to take certain administrative decisions.

Who was to ensure that a decision once taken was being properly implemented? In a university set-up the key person is the Assistant Registrar. He is the man incharge of a whole area of operations. It is for him to make sure that those working under his charge to their duty, anticipate developments when they are likely to occur and establish the necessary linkages so that there are no breakdowns in terms of cooperation and coordination. With almost a dozen persons at that level, there were a few weak links. While some of them would take their responsibility seriously, others either lacked the willingness or the capacity to get the job done. How to deal with the situation was a problem that had to be attended to as an important part of my functioning.

I cannot say that the problem was solved satisfactorily. I tried to do some monitoring through the staff available in the Vice-Chancellor's office. The monitoring was not always effective, however. So much depends upon the quality of people at one's disposal. A couple of them were capable and alert. They were always able to give a good account of themselves. I wish I had several more of them on my staff. But people of the requisite calibre were just not available. To have taken out some people from the branches where they were located might have meant a collapse of that particular branch. What would have been left to monitor in that case? It was a difficult situation. If I may quantify, monitoring was successful at best upto 50% and no more.

This in a way illustrates the situation in the universities as also in a large number of other institutions. Indifferent performance has been tolerated for such a long time by now that those who get promoted are not necessarily those who deserved to get promoted. Instead they got promoted because they were senior to others in the hierarchy. Not to promote them would have created problem no doubt. Therefore, most people take the line of least resistance and go by seniority. In the bargain, competence gets devalued and today we have a situation where it is difficult even to keep functioning.

It might not have been necessary to say all this except that it is only by recognising and rewarding competence that people can be helped to discover themselves and to grow. In our system we do neither. A sense of competition is unavoidable if people have to overtake one another. But, it is competition precisely which we seek to eschew. We prefer consensus because this amounts to playing safe and can not lead to any unexpected upset. My own estimate is that out of the 1400 who belonged to the non-teaching staff, at least 300-400 were capable of much better performance than they were putting forth. But they had been allowed to decay in this atmosphere of promotion by seniority and absence of competition.

Implementation however is not only a matter of what happens on the administrative plans. A general sense of support to a particular decision is no less important. In certain cases this was forthcoming. In certain other

cases however it was not forthcoming. In plain words, while academics would agree to a certain decision, they would not display the requisite energy to act upon it. Partly on my own and partly through my personal staff, I would follow up the matter but this would not always work. In fact, it worked only in a few cases where either the issue became one of urgent public importance or someone was affected adversely and he brought the matter to the notice of those concerned.

There is another aspect of the problem too and that relates to the choosing of one's objectives. What is to be one's objective? Should one aim at the ideal and accept nothing short of what should be done? Or, should one be prepared to compromise and accept something even far short of the ideal? The issue is not only theoretical in nature. It is of direct practical relevance. So much of what happens in a university has to be judged in terms of this yardstick.

My own answer to this problem was that one should be pragmatic and not idealistic. Pragmatism however should not be taken to mean any kind of compromise with the vested interests or with corrupt practices. In other words, one can accept a low level of performance provided that is owing to reasons which the individuals concerned cannot help. It is not fair to blame anyone for not being able to do something which is beyond him. May be the individual requires to be helped. If so, he should be helped. But to blame him because he is not doing better than what he is capable of is to be unkind and even harsh.

To put up with unsatisfactory performance however because there is something underhand taking place in the background or because incompetent people have been preferred to competent ones or because there is political interference or something like that is, in my opinion, unforgivable. Wherever anyone of these things occurs, one has to be unsparing in one's opposition. All those people who are a party to this kind of thing must be dealt with suitably and indeed no quarter should be given to anything underhand.

It does not follow from this that one should set up an impossible ideal for oneself. That would be to become idealistic in the pejorative sense of the term. Idealism should mean commitment to certain ideals and willingness to sacrifice one's personal interests for the sake of that ideal. Idealism cannot mean commitment to something which is impossible of being achieved. This I would much rather call lack of realism.

In seeking the ideal, one does not reject or despise the real. One would like things to be much better than they are. But there is always the criterion of feasibility. In a given situation certain things are feasible while certain should make a correct assessment of the situation, decide what is feasible others are not. If one goes in pursuit of the unfeasible, one loses touch with reality and to that extent becomes idealistic. What is required is that one should make a correct assessment of the situation, decide what is feasible or not feasible and then work in pursuit of the feasible. The only safeguard to be kept in mind is that the feasible, as stated above, does not degenerate

into support of what one does not deserve to be supported or even the *status quo*.

In the university world, attempts at examination reform during the last three decades and more are an illustration of what has been stated above. The Radhakrishnan Report came out strongly in favour of what is by and large known as the system of internal assessment, i.e. assessment by the teacher instead of through a public examination. Beginning with that Report, most attempts at examination reform during the last few decades have been in favour of putting the teacher at the centre of things and going by the evaluation that he gives. Other aspect of examination reform have been ignored altogether almost.

What has been forgotten is the fact that what works in one social setting does not necessarily work in another social setting. Internal assessment in Indian universities, wherever introduced, has led to corruption, favouritism and worse. This of course does not apply to high level institutions like the IITs, the Institutes of Management, the agricultural universities and so on. But wherever else it has been introduced the results have been disastrous. University after university has tried this experiment only to come a cropper.

Here is a piquant situation; in pursuit of the ideal (internal assessment what is feasible (improvement of learning as well as teaching and the examination system) have been neglected. This is a classic case where the ideal is unattainable and the feasible is disdained. It is feasible to improve the existing examination system to a considerable extent. It is this very system that is being followed in the U.K. If they can maintain good standards with the help of this system, the system is not inherently faulty. What is wrong is the way we work the system. That being so, it should have been evident that we should have tried to discover what is wrong with the way the system is being implemented, identify the weaknesses and then seek to overcome them. But that has not been done. Instead, for more than three decades now, in university after university we have been running after that never, never ideal, the attainment which seems to be impossible.

It is for this reason that I took a much more modest view of my own objectives. I did not want to introduce any new fangled ideas which would work only for a year or so and then either lead to complications or be abandoned altogether. Nor did I wish to do anything which would not be acceptable to most people and be beyond their own range of performance. In fact often my goals were unusually modest. I would say to the members of the Academic Council something to this effect. "We have seen academic standards declining over the years. They were much better, say some 20 or 25 years ago. Can we go back only that much? In plain words, my ambition was no more than to go back to standards of performance and achievement which characterised the university system, say two decades ago." That was not asking for too much. I recognised that it failed to excite people. But I did not wish to aim at that kind of success where people would get excited for a year or so and then come down with a thud. I wanted to perform in a low key and the highest reach of my ambition was to take the university

back to that level of competence and integrity where it was, say, a quarter century ago.

It was clear to me that if a change was to be brought about, persistence was an exceedingly important component in the chain. In my pseudo-scientific way I believed that following the matter through not once, not twice, but repeatedly was half the job. Perhaps, it would be best to give one or two examples of how it was done and the difficulties that were encountered.

I would like to illustrate this approach with reference to what was done in respect of improving the examinations. Several of the things have already been referred to. But there were a whole host of other things too to which considerable attention was given. Amongst them, reference may be made to moderation of results before declaration, spot setting of question papers, moderation of the papers so set, ensuring availability of apparatus and other articles for practical examinations, re-valuation of scripts, finalisation of merit list, rationalisation of the date-sheet by providing gap between one paper and another on a rational and consistent basis and so on. All these matters were gone into by a broad-based committee which worked hard and systematically for 2-3 months. Each one of the matters was gone into in exhaustive detail and in relation to how realistic or otherwise the line of approach taken was. In certain cases, exciting solutions can be thought of but if they are not rooted in the reality of the situation they cannot be put into practice. Consequently only such recommendations were made as could be put into affect both in the interests of high standards and the integrity of the system.

I do not know how many of the reforms introduced at that time are still in operation or not. Once in a while somebody comes along and mentions a few things. That is how I get to know what is happening. But for my part I have not tried to make systematic enquiries of any kind. I have no doubt that some of those things must have endured. Most of them were based on sound academic reasoning and feasible administrative arrangements. There is no reason therefore why such innovations should have been abandoned. I know of at least one important innovation however which has been abandoned. This was mentioned in the newspapers and that is how I got to hear about it.

One important weakness of the scheme of study at the undergraduate level in all Indian universities is that while in theory we take it for granted that the student has learnt how to wield the language, in actual practice this does not happen. The confusion and duality about the medium of instruction also contributes to it. In about one-third of the universities in the country, one of the Indian languages (mostly Hindi) is the medium of instruction. In the remaining two-thirds however English continues to be the medium of instruction. Students in most universities do have the option to write in their own languages but not more than one fourth or one-third exercise this option. In other words, out of 2.5 million or so students at the undergraduate level 1.5 million do use English as the medium of instruction and examination.

Standards of attainment at the undergraduate level would be vastly

better only if language teaching could be improved. At the moment the situation is downright unsatisfactory. Students devote a good deal of their time and energy to the learning of English as a foreign language but their standard of attainment is so unsatisfactory that it tells upon even their grasp of other subjects which they are required to learn through the medium of English. Inability to handle the language can be a serious handicap. In every academic situation it has almost a crippling effect.

Wielding the language has two important components. One is the ability to master the grammar and the syntax, acquire a certain range of vocabulary and then learn the craft of constructing sentences. The second is the ability to be able to think somewhat coherently. This second ability depends to a considerable extent upon the acquisition of the first ability. Since the first level of ability itself is shaky and infirm, the second ability (to be able to think coherently) gets further weakened. In plain words, our students not only do not know how to express themselves, they also fail to learn the art of clear thinking.

Those who are educated through the medium of Indian languages should be stronger in respect of the second ability. Learning the language that they have opted for should not be so difficult. It is close to their daily speech and mode of thinking. While they have this undoubted advantage, they lose heavily on another score. The quality of teachers that they have in most subjects and the kind of textbooks to which they have access are both unspeakably poor. Therefore, the advantage which they could have had as compared to others who were learning through the medium of English is more than offset by the poor quality of education. In either case students at that level are in an unfortunate position.

In order to find an answer to this problem, I put forward a certain scheme to the Academic Council. My scheme was simple. Students do not learn the language that they have opted for as satisfactorily as they should largely because they do not get any writing practice. Even when they write, nobody is there to correct what they write. The mistakes that they make continue to be made and there is never an occasion when somebody can point out to them what is right and what is wrong.

In my experience as a teacher I have come across scores and scores of students who never had a good language teacher. Sometimes even at the Master's level it has been necessary to perform this most plebeian but vital function. In quite a few cases students who were supplicating for the Ph.D. degree, had mistakes of syntax as well as of idiom in English pointed out and sometimes not in very polite language. All this could be taken care of provided at the high school and the undergraduate level there is someone to help students to acquire correct knowledge of the language that they have opted for.

In this connection, I proposed that a Workbook should be got written by the university in respect of each language. In the context of Patiala, this meant English, Punjabi, Hindi, Sanskrit and Urdu. The Workbook was first to contain a set of exercises and then the requisite pages of blank space

to do those exercises. The exercises were to be graded on the principle: from the simple to the complex. The norm established was that something should be done every week and a schedule should be worked out in respect of the whole academic year. Getting Workbooks written in different languages was quite a job. Getting them printed and pricing them to be within the reach of the students was yet another hurdle to be crossed. At the discussion stage, before the project was embarked upon, there were all kinds of misgivings. Those were overcome one by one and the project launched.

There were two further issues to be sorted out. One was to make the teachers invest many more hours of work into teaching than they had been accustomed to. The second was to make the students accept this innovation in such a way that they should not regard it as an imposition but as an aid to learning for which they would get academic credit. Both the issues bristled with difficulties but we were able to take care of them eventually.

To take the student angle first, it was decided to set apart 10% marks for the Workbook in respect of the paper known as Composition and Grammar. There was to be no grading. If somebody had done all the exercises he was to get full marks. If he had done half of them he was to get 5 marks. No weightage was attached to the quality of work done. That could have led to arguments and counter-arguments in the class-room as well as at the examination time. We did not want that. All that we wanted to ensure was that the student actually did those 25-30 exercises in the course of the academic year. Even if he copied from another Workbook, credit was still conceded to him. The overriding intention was to overcome their resistance to written work.

In plain words, the incentive to students was that they would get 10 marks out of 100 regardless of whether what they did was good, bad or indifferent. This was somewhat on the analogy of the practical notebook in respect of science students. On an informal basis students were taken into confidence when the proposal was under discussion. Most of them reacted favourably to it. We had every expectation of the project being accepted by them.

In the case of teachers, it was much more difficult to persuade them to accept this innovation. One thing was clear. So far they hardly supervised the written work of students. Not even 10% of students were doing written work in any case. How much of it came under the scrutiny of teachers was another matter altogether. What was proposed now was that everybody should be required to do written work and every single exercise should be corrected by the class teacher.

It was making a tall demand on them. The chances of their doing the job sincerely were not particularly bright. But than on behalf of the Academic Council we suggested a technique which the teachers could resort to without much difficulty. Two-third of the exercises were such that these could be done collectively. In that sense no individual attention was required. All that a teacher had to do was to take up the exercise and discuss it in the class. In this way, the students would get to know what mistake they had committed and they would correct their own exercise books. In certain cases, it was also suggested that students might be asked to check one another's work.

There still remained one-third of the written work however which would require scrutiny by the teacher. It was in regard to this part of their obligation that some kind of a campaign to educate them and persuade them had to be undertaken. For instance, one or two teachers from each undergraduate college in the discipline of English were invited to attend a conference at Patiala. With the help of some people who had already received some training in the art of pedagogy and more particularly in the teaching of English as a foreign language addressed them and sensitized them to the issues of language teaching.

On the whole the meeting was successful. It generated a certain amount of enthusiasm. But from this it cannot be inferred that everybody was of the same view and everybody had accepted the new requirement of increased workload. Nevertheless, a beginning had been made. It was decided that similar conferences would be organised in respect of other language teachers too. At least one in respect of Punjabi teachers was organized during my tenure. This was the first time that the teachers of Punjabi at the undergraduate level in Punjabi University had been brought together. To say that they were thrilled by the experience would be a gross piece of understatement. They found it difficult to believe that somebody had taken them so seriously as to invite them to a conference.

During the first couple of months the student responses to the Workbook was favourable. There was some grumbling on the part of teachers but it was gradually taken care of. More and more people began to see that this was a good academic innovation. The only thing to ensure was that it should be sincerely put into practice. I am aware at first hand of what happened during the first few months of the new session. In one or two cases I intervened personally to soothe ruffled teachers and avoid confrontation between teachers of the college and the Principal.

It was one of those familiar instances where teachers were being asked to put forth extra effort without being compensated for it. Nobody referred to this aspect of the situation. It was clear however that teachers were accustomed to a certain way of functioning and that is what they regarded their duty to be. If the terms of duty were somewhat enlarged and re-defined, they looked upon it as an act of imposition. The Principal in this case chose to assert his right and order teachers about. They resisted and it could be as well have led to some kind of a confrontation. I got to hear about it and the matter taken care of.

More than a year later however I read in the papers one day that this whole scheme had been abandoned. I have not talked to anyone so as to ask for details. I can very well imagine however what must have happened. Neither the students nor the teachers were all that keen on this innovation. It meant additional work on the part of both. The surest way to alienate anyone is to ask him to put forth extra effort. That is what I had done. Had I been around, however, I would not have allowed the experiment to sink. But others who came after me had no such commitment.

In my opinion, this experiment held tremendous promise. Our high school

and college teaching is paralysed by the inability of our system to help students acquire the right level of linguistic ability. Even within the existing system there are some students who come to acquire the ability and a large number who fail to acquire it. One has only to look at the performance of those who have acquired this ability to see how crucial it is not in respect of the ability to express ourselves and the ability to think for ourselves.

To have a situation in which only a small percentage of students get the right kind of education and the vast majority do live with a situation which is academically indefensible and socially unjust. But year after year and in university after university we have lived with it and there are no plans even to seek to change the situation. If there is one single reform to be introduced at the undergraduate level in all our universities, it should be to enable students to acquire better linguistic competence—whatever be the medium that they have opted for. I thought that at Patiala we had made some kind of a breakthrough but that was not to be. I was not there long enough to see the experiment through.

To reiterate, persistence with an innovation is half the battle and perhaps the more important half.

Salvaging Higher Education: Limiting the Importance of Degrees

JOHN KURRIEN

The link between education and employment in government, industry and the professions was established in nineteenth century colonial India with the introduction of a modern and all-India system of mass formal education. This link has over the decades become a soul-crushing bear-hug destroying the vitality of higher education. The acquisition of degrees, and consequently access to various types of employment, have become the dominant, if not the sole, objective in pursuing the higher learning for the vast majority of our college and university students.

Such a narrow and obsessively pragmatic view is probably the single most important factor accounting for some of the major problems affecting higher education. It has led to the tremendous demand for educational facilities, and the soft state response to it of financing an unprecedented and unnecessarily rapid expansion of universities and colleges. We have as a result large numbers of superfluous and substandard institutions without adequate staff, libraries and other necessary facilities. There has also been an alarming number of students admitted to colleges, who are neither intellectually competent nor motivated to pursue higher education. Many of them engage in extra-curricular, and often blatantly anti-social, pursuits which no longer shock us because they have now become a permanent feature of life on Indian campuses.

The link between degrees and jobs has also had a debilitating effect on the quality of teaching and learning. Students demand and receive from teachers lectures covering nothing more or less than the prescribed syllabus, which are faithfully recorded, committed to memory and regurgitated at the examinations. Since nothing more is expected from a university education, little else is given. Such an illiberal environment in the vast majority

of our institutions has subverted all attempts at reform. And we will continue with this dismal state of affairs because few teachers and students are seriously interested in fundamentally changing a system whose demands on them by way of time, energy and study are extremely limited, and is perhaps the lowest in the world.

The good news on the other hand is that there are more and more people within and outside the university who are fed up with the status quo, and are by now willing to consider radical but practical solutions to improve higher education. The dissemination of research findings and the reporting of the conduct of examinations in the print media in postindependence India, have happily conspired to bring about in recent times a fairly widespread public questioning of the legitimacy of university evaluation procedures and the degree itself. The salvation of higher education lies in capitalising on this unique opportunity to innovate provided by the present pervasive public scepticism.

External Examinations

The seeds of the present crisis lie in the fact that most of our young men and women study in affiliated colleges, while the affiliating universities structured on the nineteenth century University of London model continue to function as merely examining and certifying bodies. Those who teach do not evaluate their own students, and this split has been institutionalised in the torturous external examinations that lakhs of students undergo every year.

For more than fifty years, official commissions and various educators have perennially voiced their concern about the baneful effects of such an examination-cum-certification system on the content and pedagogy of higher education. We have not yet, however, been able to institutionalise successfully on any significant scale alternative forms of evaluation. This extraordinary imperviousness to change has in part been due to the fact that the external examination system has for over a century enjoyed fairly widespread public support as being an impartial and reliable indicator of at least examination performance, if not academic competence.

Loss of Faith in Examinations and Degrees

This consensus on what a degree signifies, however, no longer holds. Our universities are finding it impossible to maintain the integrity of the examination system. One would be hard-pressed to think of a single illegitimate method that has not been tried out by individual or groups of students to improve their chances at examination success. These have not been limited to the various malpractices before or during the examinations such as leaking of papers and individual, group or mass copying. For some students even this is tempting fate too much. They have resorted to bribery or intimidation to get their marks altered on their papers or certificates. There are

of course those who have opted for the easiest shortcut to success, and have procured fake certificates attesting to their brilliant performance at the university without ever having sat, leave alone studied for the examinations.

It should be pointed out that by the very nature of this phenomenon, the malpractices that are exposed in the newspapers may be only the visible tip of the iceberg. Most universities are finding it impossible to counter this unprincipled and irresistible onslaught on the examination system. Their administrative structures are finding it difficult as it is to cope with various unions and run the annual examinations efficiently and on time. It is at present asking the impossible to expect that the declared results are also reliable indicators of the performance of the approximately two million students who appear annually for public examinations in the field of higher education. The stakes are too high because careers are on the line, and the system too unwieldy and open to corruption at all phases of its operation. The most stringent measures to ensure that the examinations are conducted, evaluated and recorded fairly and reliably have failed to stem the rot.

In such an environment which finds increasingly large numbers of students who are willing to try, and are successfully employing, illegitimate measures to ensure success in the examinations, it is becoming difficult for the remainder to stay honest. Many of them, who are personally troubled by such immoral measures, feel that the price of virtue is too high and succumb. An increasing number of parents and teachers either collaborate in such activities or implicitly condone them as being a necessary evil. In such a habitat of rampant immorality, ethical students may soon like the dodo become an extinct species.

Unreliable Examination Evaluation

To students who maintain their integrity, the most unkindest cut of all is to discover that good performance in the examinations is not always reflected in commensurate results. Though our traditional examinations test only a narrow range of skills, specially those of memorisation, perhaps the gravest deficiency in our evaluation system lies in the complete lack of agreement between examiners as to what constitutes a good or a mediocre paper. When the same ten history answer books were given to ninety experienced and recognised examiners to evaluate, the same answer book was considered worthy of a distinction by one examiner and failed by seven of his peers. Eight examiners gave this script a I st class, forty one a II class while the remaining thirty three awarded it a III class. Unanimous agreement on awarding passing or failing marks was reached on only two of the ten papers.

It is not commonly known, even among educationists, that variations in marking are not limited to 'subjective' subject like languages and social sciences. They are also to be found, though to a slightly lesser degree, in the evaluation of 'objective' subjects like mathematics and the physical or natural sciences. In another study of examiners and examinations, it was discovered

that in eleven out of a thousand answer papers in geometry, the marks awarded when the scripts were evaluated the second time were changed by as much as two divisions. Surprisingly, when one experienced examiner evaluated the same geometry answer book a second time, without being informed of the marks that he had awarded in his first evaluation, it was discovered that he had failed this script in the first round, and had raised it by 40 per cent to the top of the second division the second time around. The pity of it is that one more or less mark decides not only whether one gets a first class but also determines whether one is admitted into a prestigious institution. Entrance into medical and engineering colleges, for example, often exclusively depends on the cumulative totals in "objective" subjects like mathematics and a combination of the sciences.

These studies of examination evaluation were done under controlled conditions when examiners were conscious that their work would be closely scrutinised. One can imagine how much worse the real life situation must be when examiners are given hundreds of answer books to evaluate, relatively unsupervised, in a short period of time. It is not surprising that the research on traditional examinations unanimously concludes that a candidate's marks depends as much or more on who the examiner is, than his or her actual merit. Those who believe in the efficacy of prayer to influence their marks should in their petitions take cognisance of this research finding, and implore the Almighty to ensure that their answer papers find the 'right' examiners.

Variations in University Standards

This growing lack of faith of both employers and university officials in degrees is further compounded by the fact that our institutions of higher education are characterised by a dizzying range of standards. Some of our approximately 125 universities or deemed universities could be ranked among the best higher educational institutions in the third world. Many are likely, however, to feature at the bottom of the pile if such an assessment was to be made. Should students who are awarded first class degrees from Bombay, Delhi or Madras University be treated on par with those considered worthy of similar distinctions by Marathwada, Utkal or Vikram University? What is patently unfair to both sets of candidates is that while the latter universities are popularly considered to have lower standards, comparative judgments are not only rarely made on the merits of individual departments but are also based on the most impressionistic of criteria. The situation is in fact worse because most employers and university officials are barely even aware of the existence of many of the universities in our country.

This growing lack of knowledge and trust in what a university degree signifies has led some universities and educational institutions to conduct their own evaluation procedures. While no employer has ever relied on the degree alone for purposes of selection, the majority of our universities continue to rely almost exclusively if not entirely, on examination marks. Employers on the other hand complain about falling standards, but continue

to advertise for degree-holders principally because this reduces the potential number of applicants. It is only when universities and employers cease as far as possible to use the degree as a screening mechanism, and substitute other and more appropriate selection tests for further education and employment, that teachers and students will be compelled willy-nilly to question and change what is being taught and learnt.

A Limited Delinking Strategy

Proposals to delink degrees from further education and employment have been mooted by many in India and abroad. Some of the following recommendations have already been institutionalised successfully in a few educational institutions in India. The suggested measures are also selective in that they attempt to scrap entirely, or minimise the importance of degrees, only in identifiable pressure points in the system where the number of applicants for scarce positions is extremely large. Such a limited strategy implicitly recognises that it would be unrealistic in the near future, and in some cases unnecessary, to dispense with all degrees entirely as, for instance, recommended by Ivan Illich in *Deschooling Society*. It also envisages that those responsible for selection should enunciate and give the widest publicity to just what it is they are looking for in students and employees by way of knowledge, skills and attitudes, and devise appropriate tests to assess their requirements.

Delinking Degree from Further Education

For instance, it is possible for all engineering colleges in a state to follow the Indian Institute of Technology (IIT) model, and to conduct a joint entrance examination for the selection of students for their undergraduate engineering courses. Candidate sitting for the all-India IIT entrance tests are expected to have an extensive and an indepth knowledge of Physics, Chemistry and Mathematics, and are tested for comprehension, speed and originality. Selection depends exclusively on performance in those subjects, and acquiring a minimum passing mark in an English paper. While the only academic qualification that is required is a higher secondary school pass, the examination attracts thousands of young men and women including college graduates.

There is no reason why each state cannot conduct similar examinations in important centres and on different dates for admission to the engineering colleges in the state, and a separate examination for its medical colleges. A high or higher secondary school pass could be kept as a necessary academic qualification. The widest publicity should be given to what is needed by way of knowledge for the examinations, the types of questions that will be set, and the performance level to be expected from successful candidates.

Selection for Other Prestigious Undergraduate Colleges

Many universities are now allowing candidates to appear privately for various degree examinations without attending classes, and admission re-

quirements for full-time study in many colleges are often nothing more than a high school pass. Thus the pressures to perform well at the matriculation, and higher secondary school or pre-university examinations are largely to gain admission to medical or engineering colleges, and prestigious arts, science and commerce institutions. For the latter institutions there may be no other way out, in the immediate future, but to use the marks at the 10th or the 12th standard as the major criterion for selection. It is, however, possible for these prestigious colleges to insist on an interview or even a short written test in which candidates can be quickly tested for their grasp of the subjects they are supposed to have excelled in. This may weed out or deter some of those who have acquired their first classes and distinctions in the board examinations through entirely fraudulent means. It is also possible at the interview stage to gauge and give weightage to extra-curricular interests and other talents of applicants.

But perhaps the best solution would be for prestigious arts, science and commerce colleges in each of our large cities and towns to join together and conduct their own common entrance examinations. Individual colleges could then hold their own admission interviews. These tests could be given prior to the declaration of school examination results, and final admission could be given depending on whether the candidate has passed or failed the school or pre-university finals.

Admission for Postgraduate Study

At the postgraduate level where the number of applicants are far less than those who apply for undergraduate study, the entire responsibility for selection should be left to individual departments and institutions. In the immediate future, such efforts could be concentrated in prestigious institutions and departments within universities where the number of applicants far exceed available positions. It should be noted that some prestigious management institutions and the Tata Institute of Social Science (TISS), for example, are already conducting their own examinations. At TISS, less than 20 per cent of the total selection marks for postgraduate study is given to the previous degree, and the rest is allocated between other selection tests which include essay-writing, group discussion and interview. It would be preferable at the postgraduate stage to select candidates only on the basis of performance for undertaking such study. An undergraduate pass degree should be considered the sufficient qualification to appear for these tests.

Delinking Degrees from Jobs

It is as or even more important to extend the principle of delimiting the use of the university degree to the job selection process. If employers were to take a fresh look at their selection procedures, they would be surprised to find the number of white collar and even prestigious positions that do not require a degree.

The standard practice of insisting on such qualifications also abounds with the most curious of contradictions. For example, the Reserve Bank of India expects clerical recruits to be graduates with a minimum of 45 per cent aggregate marks. Candidates for its A and B grades of officers need to be graduates with a second class, either and be doctorates or postgraduates with a minimum of 55 per cent respectively. On the other hand, a graduate pass class is the only academic qualification required for the recruitment of fresh probationary officers to the government's highest administrative positions in the civil service (IAS) or foreign service (IFS). Considering that both organisations have designed and conduct their own rigorous tests to select appropriate personnel, one fails to see the method in such madness.

This insistence on a degree prevents us sometimes from rewarding experience and talent in our own backyard. There are many cases of employees who deserve to be promoted but see less experienced and capable people with degrees being freshly recruited or promoted over their heads. While professional degrees such as engineering, medicine or accounting cannot be dispensed with for certain positions, there are many other prestigious jobs which require only certain basic cognitive, communication and social skills, experience and the potential to learn the job.

Possible Objections to Delinking Measures

The principle objection that one can anticipate to these proposals to delink degrees from further education and employment is the view that it will prove to be an administratively impossible task to conduct such examinations. A Pandora's box would be opened with too many applicants chasing limited openings. It would be stressed that as a result of self-selection, only those who think that they have a reasonable chance to succeed will invest their application money and time.

For example, though millions of students have the necessary degree qualifications to sit for the IIT Joint Entrance Examination which is conducted in almost every major city and town in the country, less than 50,000 candidates appear for the examinations from which less than 2,000 are chosen. Moreover, both government and large organisations in the private sector have over the years recruited and trained experienced staff to conduct a range of tests for large numbers of people. Their personnel departments and the growing number of recruitment agencies can take care of any possible shortrun increase in the number of applicants.

Corruption

It may be also felt that if professional and other prestigious undergraduate and postgraduate institutions were to conduct their own admission tests, these too may not be immune from corrupt practices. While corruption in one form or the other will enter in when the demand for available positions far exceeds supply, it is likely to be far less in institutions which are highly

selective. Unlike the present examination system, which caters to a wide range of institutions, the numbers that will be applying to these selective institutions will be much smaller, and hence capable of close supervision. It is also possible to institute more checks and balances in the conduct and evaluation of the tests. Perhaps the most important factor that will minimise the corruption of selection procedures is that the reputation of selective institutions depends considerably on the calibre of the students they select. Like the IITs and IIMs, the quality of such institutions depends on ensuring that the selection procedures are reliable and impartial.

Lowering Efficiency Standards

Fears that delinking degrees from jobs will lower standards of efficiency are not warranted. The only difference will be that those who have degrees will be competing for jobs with those who do not have such qualifications but think that they have the necessary skills and potential. In fact, one may get a better selection of candidates because employers will be paying more attention to defining and advertising more clearly their job requirements, and to devising appropriate tests. For example, if among other things a job requires writing skills, it surely make better sense these days to test for these skills than to take it for granted that a first class graduate should at least be capable of writing with some degree of proficiency.

A Delinked Higher Education Scenario

Once degrees are only required for jobs which unequivocally demand higher education in professional fields, then young men and women will begin actively to search for places and people within and outside the university who will teach them the skills necessary for the jobs they want to take up. What will be avoided to a considerable extent are the large numbers who are now aimlessly attending colleges, postponing their career decisions and acquisition of vocational skills because they feel a degree under their belt will improve their chances of getting a job.

Removing Present Educational Reform Barriers

If universities and large organisations used degrees in their selection procedures only when there is a compelling and clearcut rationale for its utility, than the stage will be set for the rejuvenation of higher education. Government being our largest employer should set the example. For instance, there will be no need for students to fear internal and continual assessment by their own teachers. Neither will the latter feel constrained to inflate these marks, as they currently do in many institutions and thus subvert this critically required reform. There will be no need for students to be seduced into joining the National Service Scheme (NSS) with the incentive of additional marks. There will be no need, in short, for teachers and students to evaluate every

innovation by the contemporary yard-stick of whether such change will add or detract from examination performance.

Compelling Student Demands for Innovations

When degrees lose the significance they have at present, and there are no compulsions from the job market or prestigious educational institutions to use any means to perform well in the public secondary board or university examinations, it is then and then only that students will start asking serious questions and demanding solutions about the content and purposes of higher education. For the realisation will dawn on them that while their performance in selection tests for further education or employment may depend on specific vocational skills, it is even more important to have a fundamental and broader body of knowledge and skills. The majority of our undergraduate and postgraduate institutions at present cannot even dream of imparting such training, dominated as they are by the tyranny of external examinations and degrees.

Students may start demanding not only job-oriented courses but training in, for example, skills of communication, critical thinking and problem-solving. They may start asking for extracurricular activities and community service programmes not merely because these are intrinsically satisfying and worthwhile activities. They will also realise that these endeavours are also the best training grounds for the development of personality, and the learning of social skills such as cooperation, persuasion and leadership. They may even start wanting to know about the social, economic and political development of our country. They may, in other words, ask for a liberal education because in a world where the only constant is change, it is this type of knowledge, and these kinds of cognitive and social skills which employers are and will be increasingly looking for in young men and women. And when students, and not merely university commissions, start demanding such changes it will be an offer which colleges and teachers may find impossible to refuse.

Autonomous Colleges

Such a radical change in our education is only possible if our colleges are allowed to be fully responsible for the selection of students, courses and evaluation. These limited proposals to reduce the significance of university degrees at key pressure points have as their objective the removal of the most important barriers and fears which today restrict the growth of autonomous colleges. For it is in the proliferation of such autonomous undergraduate and postgraduate institutions entrusted with the full responsibilities of education, and allowed to get on with the job as best they think fit, that the road to salvation of the higher learning in our country lies.

There may be many who think that the solution does not lie in these or other measures which aim to reduce the importance of degrees for further

education and employment. It may be felt that the solution lies in more traditional and less radical measures like closer supervision of paper setters, university presses, examination candidates, invigilators, evaluators, university clerks and other concerned officials. Such steps have not worked before and there is nothing in the cards to warrant hope in merely better mousetraps. They only delay the opportunity that has been provided by the current public scepticism towards university degrees to debate and implement measures that would have been considered unacceptable even a decade ago. For the day of reckoning is very close at hand. And I for one have ceased to be dismayed by, but in fact have begun to welcome, the uninterrupted news of leaking of papers, mass copying, the intimidation of invigilators, the bribing of examiners, the altering of marks and the forging of certificates. No public breast-beating and sermonising on the collapse of moral standards in contemporary India will stem this rot, and nothing else but more of this news will eventually compel us to consider the alternatives.

Social Work Practice: A Recent Definition

H.M. RAJYAGURU

The trained or professional social workers are labelled with many complementary as well as derogatory descriptions and stereotypes. This imprecise identity hinders a critical discussion and evaluation of their actual and potential contribution in the national development. Let it be clarified that there are many valid reasons for such an imprecise identity. One of the major reasons is that helping activities have been a part of human life since early times. The specialized group of trained helpers—professional social workers—came into existence only at the end of the former century. It is believed that social work education started during 1891 in Netherlands. Since then, the group of trained social workers have been constantly trying to clarify their roles and functions. Even at the present juncture, some of the foremost social work educators (ASSWI, 1977), continue to admit that we need to clarify our identity.

In view of this situation, the present paper begins with the description of roles and functions performed by the trained social workers in India. Second part of the paper summarizes these varied roles and functions with the help of a recent and unifying definition of social work practice. Four major terms contained in the definition, viz: system, profession, psycho-social functioning and quality of life are elaborated with the help of recent literature. A brief discussion on some of the salient issues is presented at the end.

What Do Social Workers Do in India?

Developmental processes affect and are affected by economy, polity and society at large. One of these pervasive effects is an increased need for specialized services. Services which were traditionally an integral part of or

responsibility of family or immediate local community are no longer considered adequate. In the present times, transportation and communication services, welfare services, etc. demand specialized knowledge, skills and values on the part of relevant occupational group to perform specialized tasks of delivering these services and solve problems in these areas. In return for their professional (Knowledge, skills and value based) services, the society offers money, power and prestige to these occupations.

It should not be difficult to see that the professional services are provided with an aim to alter or change the aspect with which they are concerned. For example, a doctor aims to change the health status, i.e. he tries to cure, rehabilitate or prevent health problems, as well as assure the optimum possible health status of his patients. Similarly, an educationist tries to change the educational status of his clients. In both of these examples, the clients (or primary target units) are individuals and the professionals have a single field in which they operate, viz: health or education. Contrary to this, the social workers work with individuals, groups, communities, organizations and larger level units. They also operate in the variety of fields, like industry, health, education, social welfare agencies, etc. Because of this situation, we should describe the jobs and functions of trained social workers in various fields. This will clarify the type of social work clients and the nature of social work activities.

In industries, social workers are employed as Personnel Officers, Industrial Relations Officers, Labour Welfare Officers or some combination of these positions. Jacob (1973: 99-117) has described in detail the functions of these personnel. The following are the major functions as he describes:

(i) *“Personnel Officer:* Directing and supervising the work of welfare/personnel department; Advising management on personnel policy and labour problems; Time Office, employee records and wage administration; Recruitment, selection and induction of workers; Statistics about labour turn over, absenteeism, etc.: Merit rating, employee evaluation and promotion etc.

(ii) *Industrial Relations Officer.* Taking initiative to maintain cordial labour management relations; Assisting in the establishment and proper functioning of grievance procedure; Negotiation with union officials; Records of cases, correspondence and office work; Preparing reports and briefs for management on disputes, etc.; Holding inquiry, charge sheeting and taking disciplinary action; Advising workers not to follow anti-management policies or declare illegal strikes; Sending returns, reports, etc. to Government Departments; Advising management not to follow anti-labour policies or illegal lock-out; Work of labour courts, conciliation, etc. on behalf of management.

(iii) *Labour Welfare Officer:* Ensuring provisions of factories Act regarding welfare, health, safety, etc.; Helping with the work of works committees, Committees for welfare, safety, etc.; Management of canteen, cooperative society, grain store, etc.; Organising recreational, cultural and educational

programmes; E.S.I. and other medical programmes; Meeting workers informally to deal with personal problems; Looking after housing, labour colonies, welfare centres, etc.; Sanctioning leave, advance, loans, etc."

Social workers are employed in a variety of agencies and residential institutions managed by the Social Welfare Department and other voluntary organizations. These agencies include, home for physically handicapped children, home and school for blind, home and school for mentally retarded, school for deaf and mute, remand home, certified school, juvenile guidance centre, etc. In these agencies social workers work as *Superintendents*, *Assistant Superintendents*, *Case Workers*, *Probation Officers*, etc. Their major functions are: to plan/provide/arrange for psycho-social therapy, occupational therapy, physio therapy and various other treatments based on a careful assessment of individuals; To arrange for vocational rehabilitation; To evaluate, discharge and follow-up individual cases; Looking after the routine of administrative work like, working with the related governmental and non-governmental agencies; to supervise the basic services provided to inmates like, food, shelter, clothing, education, etc.

Major function of a *Medical Social Worker* and a *Psychiatric Social Worker* is to facilitate medical and psychiatric treatment, rehabilitation and prevention by working with the doctor, patient, family, related organizations and the community. It has been well recognized that working with only biological aspects does not yield adequate results because an individual's psycho-social functioning and his environment effect and are effected by his illness. To be effective, the program must take into account the "whole person." Therefore a social worker required in this setting is one who investigates psycho-social background and precipitating environmental factors; provides support, practical help, education and psycho-social treatment to the patient and his family; prepares and helps the patient, family and community for preventive, curative, rehabilitative and developmental tasks.

Major functions of a *Child Guidance Worker* and a *School Social Worker* are to provide preventive, curative, rehabilitative and developmental services to the community, school, family and children for the problems like, school achievement below ability level, problems of attendance, excessive fears and anxieties, withdrawn behaviours, overdependence, restlessness, aggressive and hostile behaviour, conflict or difficulties with the authority, conflict or difficulties with other children, malnutrition, neglect for health measures etc. There may be family level problems like emotional problems of individual family members, intra-family relations, marital mal-adjustment, etc. Similarly, there may be community level problems like, lack of awareness about behavioural problems of children, unhealthy parental attitudes and behaviours, lack of knowledge about the needs of growing children, etc. To enable people to work with these problems the social worker provides/arranges for psychological testing, different diagnostic tests, health check-up guidance for nutrition, counselling of children and their families, clarifying the problems to the teachers and parents to enable them to adopt necessary

modifications, play therapy, art therapy, music therapy for children, vocational guidance, community education through talk, discussion, movie, exhibition, etc.

Presented so far are some of the positions occupied by the social workers in the industry, social welfare agencies, hospitals and educational settings and the major functions they perform as a part of their positions. To avoid unmanageable details, we have not discussed many other positions occupied by the social workers like, Social Work Educator, Family Planning Worker, Community Development Worker, Research Worker, Health Educator, Administrative Officer, etc. In fact, the positions and functions described so far bring out a bewildering reality that social workers are employed in various fields, they perform variety of functions and it might be difficult to describe a common goal persuaded by them. In a way, this looks like an identity crisis, common for many young individuals and occupations. However, social work seems to have made reasonable progress in this direction.

Definition of Social Work Practice

Delivery of professional social services was not highly conspicuous before the nineteenth century. By the end of the nineteenth century, there was a strong feeling that helping activities should become more systematic (Briar, 1971: 1237-1245). Taking a clue from their predecessors in the philanthropic and social reform work, the social workers in U.K. and U.S.A. started recognizing the need for specialized knowledge, skills and values in delivery of social services. Since then, continuous attempts have been made to increase knowledge, skills and values in delivery of social services. These attempts have been discussed earlier (Flexner, 1915; Carr-Saunders and Wilson, 1933) and continue to be discussed (Etzioni, 1969). Similarly historical development of social work philosophy, education and practice in India as well as its concern for socio-economic development have been discussed by Gore (1965) Wadia (1968); Encyclopedia of Social Work in India (1968); Association of Schools of Social Work in India (1977); and Report of the Second Review Committee of University Grants Commission on Social Work Education in India (1980). Culmination of these ideas can be seen in Alexadner's (1977: 413) definition of Social Work Practice. He states that:

Social work practice would then be defined as a professionally guided system that engages people and their social units in change activities to alter their psycho-social functioning for the purpose of improving the quality of life.

A discussion can be initiated by elaborating four major terms contained in this definition, viz: System, Profession Psycho-Social Functioning and Quality of Life. Elaboration of these terms can help us to attempt clarifications about the common elements in the positions and functions of social workers described earlier.

System

The term 'system' is understood and used in different contexts. For example, we say personality system, hydraulic system, electrical system, etc. All these systems have some common properties. They consist of relatively stable, interrelated, interacting and interdependent parts (structures) and carry on repetitive and patterned activities to achieve a common goal. Change in one part affects others because they are interrelated and interdependent. Which parts or elements make social work a system? Alexander (1977: 411–12) defines the following five essential elements.

1. *Value* : A principal, standard, or quality considered worthwhile or desirable. (These Values are presented in the Code of Ethics of National Association of Social Workers).
2. *Purpose*: The object toward which one strives or for which something exists. (The overall purpose of social work practice is to improve the quality of life).
3. *Sanction*: Authoritative permission or approval that makes a course of action valid.
4. *Knowledge*: Familiarity, awareness or understanding gained through experience or study.
5. *Method*: A means or manner of procedure, especially a regular or systematic way of accomplishing anything. It encompasses the use of *techniques*: the systematic procedure by which a complex or scientific task is accomplished, such as clarification, creation, and use of structure, and limit-setting. It also results in *skill*: proficiency, ability or dexterity; expertness.

For better clarity let us specify the 'knowledge' aspect with the help of Minhan and Pincuss (1977:347–52). Their presentation being compact, precise and unimitable, we will provide it in its original form.

"The specific kinds of knowledge necessary to organize thinking and develop understanding of situations of concern to the profession include information about the life tasks that confront all people in the life cycle and the special tasks that confront people having social problems; resources needed by people to accomplish their life tasks; the functioning and policies of societal resource systems; the operation of informal natural helping networks; factors affecting linkages between people within systems and between systems; the development of public social policy; and the development of frameworks that help one see a social situation in its entirety and comprehend the relationships between life tasks, resources, and linkages between and within systems.

To carry out specific tasks and activities to achieve social work objectives, one needs theoretical understanding and skills in the following areas:

- (i) Interpersonal relationships and communications, such as interviewing and conducting group meetings.

- (ii) Formal communication
- (iii) Forming and maintaining resources systems, as in forming a natural helping network, staffing a committee, or coordinating an interdisciplinary team.
- (iv) Negotiating within and between systems by, for example, mediating conflict, advocating, and obtaining a resource from another system.
- (v) Teaching and consulting, that is, helping other people acquire and develop the above skills and the skills to engage in effective problem-solving.

To engage in the problem-solving process social workers need a theoretical understanding of that process as well as skills in data collection, assessment, contract negotiation, formation (maintenance, coordination) of action systems, and termination with another system."

Profession

The five elements, mentioned above, make up social work system. Are there any other elements or attributes which make it a professional system? Many authors, including those mentioned earlier in this paper, have described various attributes of a profession. For example, to clarify the promiscuous use of the term 'professional', Greenwood (1957:46) has discussed attributes which distinguishes a profession from an occupation. These attributes are not dichotomous categories but they make a continuous scale. He states :

"We must think of occupations in a society as distributing themselves along a continuum. At one end are bunched the well-recognized and undisputed professions (e.g. physician, attorney, professor, scientist): at the opposite end are bunched the least skilled and least attractive occupations (e.g. watchman, truck-loader, farm labourer, scrub woman, bus boy)...The occupations bunched at the professional pole of the continuum possess to a maximum degree the attributes about to be described."

Goode (1973:341-382) mentioned that when tabulated, the characteristics attributed to various occupations, in order to prove that they are professions, show a satisfying similarity. From these lists or attributes, Goode abstracts: nature of tasks or problems with which the profession is concerned, professional knowledge and skills and dedication to service as three core or generating traits. Other traits are predicatable outcome of these core characteristics. These core characteristics are summarized as under :

- (i) *Nature of tasks*: High ranking professions deal with very serious/important, life and death problems. The substance or nature of the tasks is such that the client must allow the professional to know intimate details and get into his personal world to solve the problem.

- (ii) *Professional knowledge*: Ideally, the knowledge and skills should be abstract and organized into codified principles applicable to the concrete problems. The profession helps to create, organize and transmit the knowledge. The required amount of knowledge and difficulties in acquiring it should be great enough that the society view the profession as possessing a kind of mystery. The problems are given over to the professionals to arrive to a solution because they possess the knowledge that others do not.
- (iii) *Dedication to Service*: The profession demands real sacrifices from the practitioner as an ideal and, from time to time, in actual practice. The society believes that the profession follows these ideals to some extent. The profession sets up a system of rewards and punishments to govern the professionals. The technical solutions are based on the client's needs and not those of the professionals or the society.

Goode enumerates many other traits of the established professions which are generated from these core characteristics. For example.

The income of professionals average higher than that of other occupations because their services are needed...Professionals usually have a monopoly because they have persuaded the society that no one else can do the job and that it is dangerous to let anyone else try. They are permitted autonomy more frequently...because others are not sufficiently knowledgeable, and because others cannot be trusted to be as concerned about the client's interest. The shaping of legislation, the manning of control and examination boards, and standards for licensing are all more likely to be in the hands of professionals for the same reasons.

Instead of enumerating all possible traits of the established profession, which can be generated from these core characteristics, we will discuss the immediate and ultimate goals of the positions and functions of social workers, which will help us to see the underlying unity.

Immediate Goal of Social Work: Psycho-Social Functioning

In spite of the difficulties in identifying and describing a common goal behind the varied functions of social workers, many efforts have been made in this direction. For example, definition of social work practice, which was mentioned earlier, clarifies that all these functions have a common goal of altering psycho-social functioning of target units for the purpose of improving quality of life. Then, what are the basic elements of psycho-socially functional behaviour ?

Tropp (1971:1247) views socially functional behaviour as a management of self in such a way as to cope with social relations and tasks. This management (self-direction) and coping (coming to grips with) may be viewed on a scale ranging from dysfunctional (inadequate) through functional (adequate) to eufunctional (optimum). People are seen as being continually able

to move up the scale in a life long process of self-actualization or fulfilment of potential. Thus, the basic elements of socially functional behaviour are effectiveness in task performance, responsibility to others, and satisfaction of self. Enhancement of social functioning is usually seen as operating on three levels: restoration of impaired functioning, prevention of impaired functioning, or development toward optimum functioning. All three levels are here viewed as stages in a developmental process, within which people can be helped to achieve more of their social functioning potential.

Using social functioning as a core organizing concept in social work practice theory, other authors (Klenk and Ryan, 1974) explicate social functioning and dysfunctioning as an interaction between the individual's needs, aspirations and functional capacities on the one hand and environmental (situational) expectations, opportunities and resources on the other. The enhancement of social functioning is to be achieved through the modification of the client system and/or environmental system. Other authors in the same volume employ role and systems theories to define dysfunctional situations that require interventions. They present a classification scheme that locates targets for intervention by examining client role performance, social worker's role and appropriate activity for the social worker to carry out his role. Implicit or explicit theoretical perspectives on systems approach as well as case studies with its applications are provided by Pincus and Minhan (1973).

Discussion of psycho-social functioning involves implicit reference to the overall societal conditions or quality of life. The definition, presented earlier, explicates that the overall goal of social work practice is improvement in quality of life. Keeping this in mind, the concept of quality of life is discussed in the following pages.

Ultimate Goal of Social Work: Quality of Life

The term 'Quality of Life' has been used along with other similar terms like, Socioeconomic Development, Social Development, Planned Development, Planned Change, Social-change, Modernization, etc. In spite of the fact that there are similarities among these terms, each of the social science disciplines have focussed its attention on different aspects of these concepts. For example, economists have focussed on economic aspects, while political scientists on polity. As a result, none of the definitions of quality of life is generic enough to include various aspects of economy, society and polity. Even among the same discipline, a unanimously accepted definition of a quality of life seems to be non-existent. This has made Kendall (1974:24) to comment that explication of the developmental functions have not achieved enough specification to provide a firm base for curriculum planning in social work. In light of this situation, prior to elaboration of the term quality of life, we will present Roger's (1973: 271-72) definitions of related concepts—modernization and development—which seem to be relatively simple and useful.

Modernization is the process by which individuals change from a traditional way of life to a more complex, technologically advanced, and rapidly changing style of life. We see modernization at the individual level; so development is a kind of aggregated modernization. *Development* is a type of social change in which new ideas are introduced into a social system in order to produce higher per capita incomes and levels of living through more modern production methods and improved social organization.

Drewnowski (1974) has made a noteworthy contribution by clarifying and operationalizing nine components of quality of life which are same as components of development. Nine components and their indicators in parenthesis are as follows:

- (i) *Nutrition*: Food Intake (Calories intake, Protein intake, Percent of non-starchy calories).
- (ii) *Clothing*: Use of clothes (Cloth consumption, Foot wear consumption, Quality of clothing).
- (iii) *Shelter*: Occupancy of Dwellings (Services of dwellings, Density, of occupancy, Independent use of dwellings).
- (iv) *Health*: Health Services Received (Access to medical care, Prevention of infection and parasitic disease, proportional mortality ratio).
- (v) *Education*: Education Received (School enrolment ratio, school output ratio, Teacher/Pupil ratio).
- (vi) *Leisure*: Protection from Over-work (Leisure time).
- (vii) *Security*: Security Assured (Security of the person, Security of the way of life).
- (viii) *Social Environment*: Social Contacts and Recreation (Labour relations, Conditions for social and economic activity, Information and Communication. Recreation: Cultural activities, Music, Theatre, Cinema, Visual Arts, Book reading, Recreational travel, Sports and Physical exercises).
- (ix) *Physical Environment*: (Cleanliness and quietness, public amenities in the neighbourhood, Beauty of the environment).

Drewnowski further clarifies the units of measurement for each indicator and presents a framework for the assessment of interrelations between social and economic variables in its objective function, and the interdependence between the economic and social variables is reflected in the constraints. This approach opens up the possibility of giving social content to developmental planning. He himself admits that the ideas he has presented are controversial and that much work is necessary before they can obtain general recognition. He has recommended various improvements in the planning model to make it more elaborate, realistic and adaptable so that practical planners are helped.

Discussion

We have presented some of the positions occupied by trained social workers in India and major functions performed by them. With a view to summarize these varied roles and functions of social workers, a recent and unifying definition of social work practice was presented. Major concepts contained in the definition were elaborated with the help of recent literature. Does this mean that there is an unanimous agreement about the identity, roles and functions of social workers? Certainly not. In fact, social workers themselves identify their profession as a 'dissenting' profession. They continue to discuss their discomforts and disagreements with a view to narrow these disagreements. Let us discuss some of the major disagreements with a view to arrive at an overall synthesis of our earlier presentation.

Are the goals and methods of social work applicable in the field of personnel management and industrial relations? Is personnel management/industrial relations part of social work? These questions are raised largely because it seems to be unique for India. The western countries, whose social work approach we have adopted, have not identified personnel management and industrial relations as one of the fields of social work. Secondly, these fields do not cater to the needs of 'poor' or 'vulnerable' section of society. Thirdly, it is believed that social workers are not adequately equipped to work in these fields. Fourthly, the profit motives of industry are considered contradictory for the goals of human welfare. Many more plausible reasons can be identified for questioning the inclusion of personnel management/industrial relations field in the fold of professional social work. However, the fact remains that large number of social work graduates continue to prefer and get employed in this field. By and large, they have better salary and better financial prospects. But this reality does not answer the questions raised above. These questions have not been settled and will continue to be discussed. Some comments will be relevant at this juncture.

If we look at the roles of personnel managers or industrial relations officers, they are largely concerned with the proper functioning of personnel and industrial relations departments. They are supposed to assess various personnel and industrial relations functions, plan and implement interventive actions as well as evaluate, modify, stabilize and maintain appropriate structures. Some of the techniques, e.g. Assessment, planning implementation, evaluation, negotiation, co-ordination, communication, clarifications, interpersonal relations, etc. are applicable for personnel management/industrial relations as well as for other positions occupied by social workers. There is less of a doubt that the graduates of those social work schools, which have motivation, capacity and resources to impart job specific knowledge and skills in these areas, have done well enough in the employment market in these areas.

The question of profit motive and its contradiction with human welfare needs clarification. First of all it is not always true that all industrialists would not want better functioning of their personnel and better quality of life

for them. Many enlightened industries have made their contributions in assuring better quality of life for their workers and have found it helpful to increase labour productivity. At many such places, social workers have played important role.

Lastly, the present industrial workers may not be 'vulnerable', however, better social functioning and improvement in quality of life need not be restricted to vulnerable only. The social workers' experiences in improving the functioning and quality of life of various industrial units can provide rich data for their professional colleagues working in other areas.

Now, let us comment on other areas of disagreements. Should social work continue with 'Clinical' or psycho-social work with individuals in light of abject poverty, miserable malnutrition, disgusting housing situation, shameful illiteracy, terrifying diseases like polio, blindness, leprosy, etc. and many more massive problems? Do social workers have required knowledge, skills and willingness to attack and tackle these mammoth problems?

The list of highly discomfoting questions can be very long. However, by now, it is well recognized that 'Clinical' is not the only approach. Other approaches are being tried out. Similarly, massive problems of poverty, illhealth, slums illiteracy, etc. concern many disciplines like, economists, sociologists, doctors, educationists, engineers, policy makers, administrators, etc. We know that existing solutions are not very adequate, however, they are interdependent and intertwined, requiring fullest attention of all disciplines.

One of the most urgent tasks, which can help us to further our understanding of the role of social work and other disciplines in the national development, is to codify the available knowledge and experiences. The institutes for higher education in social work and other disciplines need to pay very special attention in documenting empirical generalizations, approaches and models which have been found useful in social developmental tasks.

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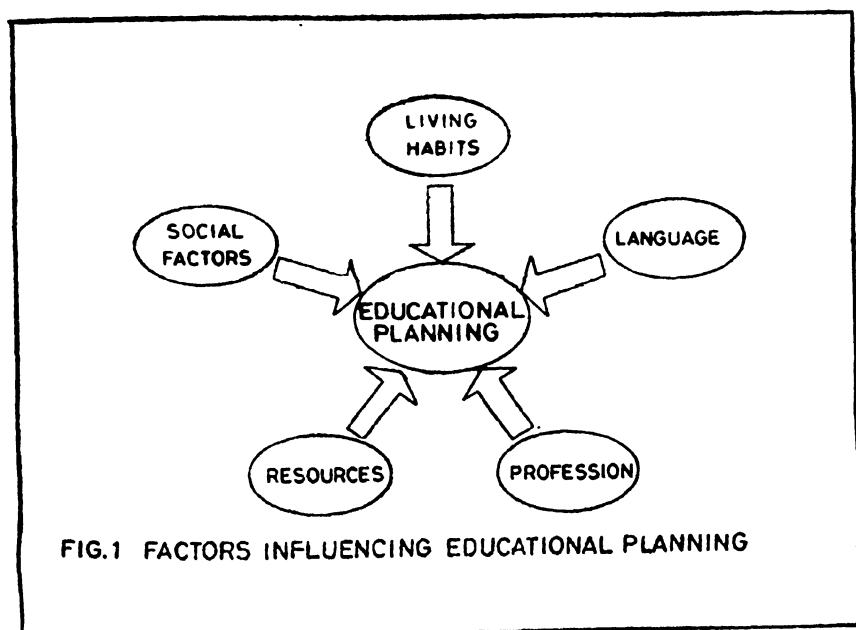
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Science-Technology Interaction: A Systems Model for Education*

M.V. ANANTHAKRISHNAN

Educational planning at any level calls for a realistic approach to, and appreciation of the various factors that directly or indirectly influence the planning process (Fig. 1) (Ananthakrishnan, 1981).



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The effectiveness of any educational system or training programme in a country is evident from the economic and cultural development of that country. Based on its cultural heritage and traditional profession, India started on an agricultural base—to slowly become an industrialised nation. All this calls for a deeper study of the entire educational pattern to take care of such changes and to cater to all spectrums of society (Ananthakrishnan, 1974).

When one speaks of education, one has necessarily to make reference to issues, viz., what are the aims and objectives of education and what are the defects in the existing system? (Acharlu, 1975). A formal education is needed by every individual in order to place him or her on a proper footing in life. In as far as science is concerned, the graduates coming out of the University have various openings to start a professional career. If we now concentrate our attention on the areas of teaching, research and industry, one 'ideally' desires to see a complementary relationship between them. But this is not so (Ananthakrishnan, 1980). However, a study of engineering/technology education has a different perspective to offer. This category of education has, by history, had an upper hand and thereby opened up various avenues for employment in business and industry. As a consequence, there is a craving for every high school leaver to go in for engineering, irrespective of his capabilities and genuine vocational plans.

Hence, what is required is an attempt to integrate science and technology into the educational pattern and ensure that every discipline/stream of educational activity has equal opportunities to get into a professional career in keeping with the individual tastes and end-objectives.

The Societal Milleau

An analysis of the society as such would be a good starting point to the formulation of the present systems model. Since the present paper is centred around the design of educational systems for proper science-technology coordination, the important components are (a) the society, (b) the industry/profession and (c) the educational pattern/policy. The constituents of the three components are given in Table 1.

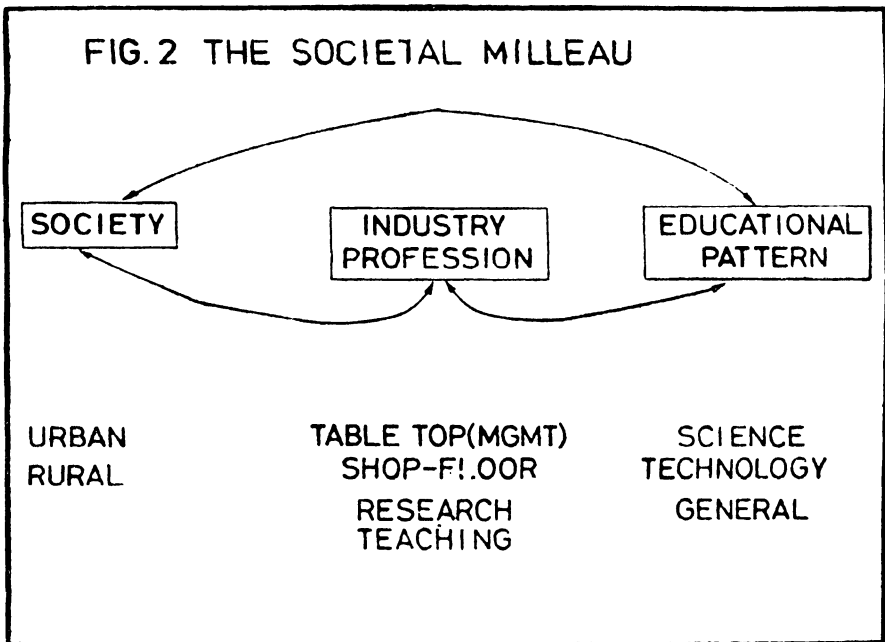
Table 1

<i>Society</i>	<i>Industry/Profession</i>	<i>Educational Pattern</i>
1. Urban	1. Table-top (MGM F)	1. Science
2. Rural	2. Shop-Floor	2. Technology
	3. Research	3. General
	4. Teaching	

The industry/profession component is shown as being made up of table-top (mgmt), shopfloor, research and teaching jobs. Some explanations will make this clear. It only indicates the class under which one could distribute the professions available currently. The 'table-top' deals with white collar jobs whereas the 'shop-floor' indicates a typical workshop environment. Research could be industry-based or institutional whereas teaching could include academic institutions as well as training establishments (in industries) for continuing education.

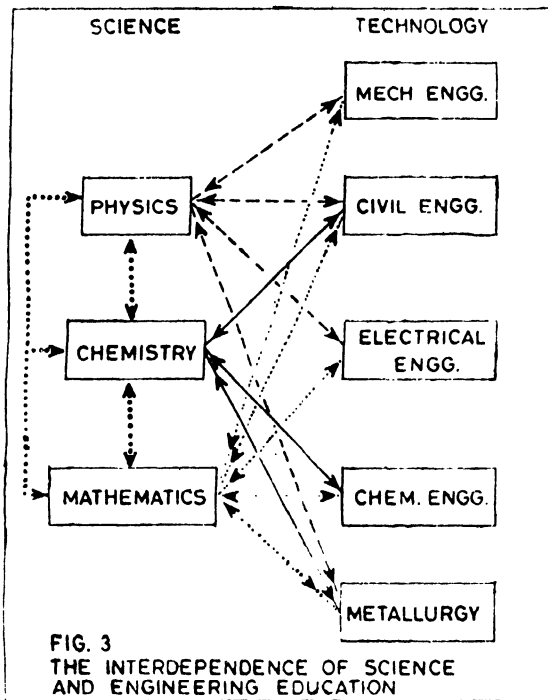
The Science-Technology Interaction

Fig. 2 gives a conceptual model of the interactions amongst the various components mentioned in the earlier section. This only shows the importance of taking a systems view of the entire gamut of education.



The intimate interactions between science and technology education is depicted in Fig. 3. This is as it should be. But practice in vogue is something entirely different—one that has led to science being given a secondary importance to technology. The fault, therefore, lies not in the subjects per se but with the very planning of the educational system and the consequent curriculum development.

The students going through the education 'machine' include generalists as well in addition to the scientists and technologists. Do these generalists have a taste of science as in most of the cases? Should it, therefore, not be



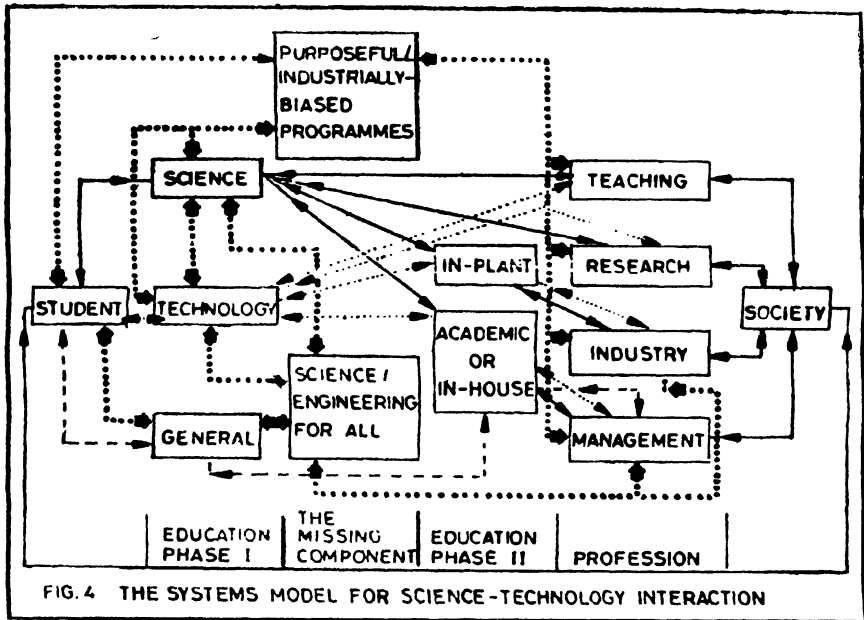
an attempt to educate them also on some relevant aspects of science and technology? The debate still continues.

Formulation of the Model

The present model considers the following aspects:

- The relevance of science and technology education in the social/ industrial scene.
- The interaction between science and technology in the social/ industrial scene.
- Factors that contribute to the necessity of science/technical education in the overall scene.

Fig. 4 shows the systems model as conceived by the author. It shows the necessity of a two-tier education-cum-training programme dependent on the background of the students. Phase-II is necessitated only when there is a drastic change in the environment of the student, e.g. academic to, industry/management cadre. One may still argue that for entering the teaching/research profession, a training stint is necessary. But it could essentially flow in from the academic preparation. However, the science-technology interaction is as shown in Fig. 3.



Interpretations and Predictions of the Model

The interpretations and possible predictions of the model make interesting reading. They are:

- The possibilities of having a system compatible with any stream of activity
- The channels by which scientists and technologists could have equal opportunity to go in for any profession of their choice
- The closed-loop system in that the student is exposed to the inputs from society (made up of industry and education).
- The closed-loop concept ensures that the system is always alive to the dynamic changes taking place in any sphere of professional or industrial activity.

The possible predictions that could be made on the basis of the model are, to same a few:

- Changes in the societal environment will necessitate appropriate modifications in the very method of teaching, industrial practices and professional styles.
- Necessity of incorporating representing from teaching, business and industry in all planning groups.
- The trends in the activities of the various disciplines with the passage of time.

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Question Banks and Construction of Tests and Reporting of Results for Internal Assessment and External Examinations

HARINDER NANDA MAHAJAN

In the current proposals on Examination Reform in universities, three facets of the same viz; internal assessment, question banking and grading are being emphasized by UGC (*Examination Reform: A Plan of Action*, 1976). Many universities have taken some steps to introduce one or more of these facets. The progress in implementing these in various universities has been reported in Status Reports on Grading, Question Banking and Internal Assessment published by AIU-Association of Indian Universities. AIU has also published three monographs on Question Banking, Internal Assessment and Grading to provide guidelines to universities planning to introduce these reforms. These facets were further discussed in some papers e.g. Iyer and Krishnamurthi (1976), Palsane and Desai (1976), Prabhu and Venakaramiah (1976), Tharu (1976), Palsane and Khedekar (1977), Mahajan (1982).

AIU is also engaged in a major project on development of question banks. It has published initial question banks in 17 subjects at undergraduate level and 1 subject at postgraduate level. The development of question banks in many other subjects is in progress. Each subject bank contains anything between 2000–6000 items of objective type as well as short/long answer questions. These questions/items at varying levels of difficulty have been prevalidated with a checklist of criteria for good quality questions/items by subject matter specialists and evaluation experts. These questions have been provided with information like (a) coding (bibliographic) (b) subject/topic (c) type of question (d) objective tested (e) time for answering (f) marks allotted. The items in these question banks have not been tried out in the field yet.

With these developments examination reforms have shifted from idealistic plans to a new phase—that of concretization of ideas and implementation.

However, a great deal of work remains to be done for example, there is a need to integrate the three facets of examination reform, the psychometric issues pertaining to these, how the psychometric theory may aid in tackling those issues and provide a data base for applying psychometric theory.

In this paper we suggest how question banks and data base provided by their try-out may be used for construction of tests for internal assessment and external examinations and reporting of results so that marks/grades will have better interpretability.

Reporting of Results

Both UGC and AIU were dissatisfied with the reporting of results on a 0-100 scale for the following reasons :

- (1) It is not known what the mark measures.
- (2) The marks are not reliable the standard error of marks may be as high as 7.5-10.5.
- (3) The score on the test depends on how easy or difficult the questions are in a particular year, but the marks for passing, first division, second division and third division remain the same for a department or university. Only occasionally marks which are exceptionally low may be moderated.
- (4) The consumers in India are very naive and take raw mark as true score.
- (5) The range of marks used by examiners varies from subject to subject and between different papers within a subject. Thus making the overall percentage ambiguous.
- (6) Different universities use different cut off points for passing and awarding first, second and third division, making comparisons difficult for purposes of admission, employment etc.

To dispel these ambiguities, it was suggested that a system with smaller number of categories (5 or 7) be used. They further recommended that a uniform system of grades be used in all universities and subjects so that grades will be comparable from subject to subject and university to university.

The proposals for reporting of results in term of grades instead of marks were discussed in a number of workshops conducted by UGC and AIU. Their recommendations are reported in examination reform: A Plan of Action, 1976 and Monograph on grading (AIU, 1977). Both recommend that

1. A 7 point scale should be used for grading beginning from O-out-standing and assigning it 6 marks to F-very poor and assigning it a 0 mark. The recommendation by UGC and AIU differ in the method for converting marks to grades in the interim period. In the UGC method marks below 35 are converted into E and F and the remaining marks from highest score in a subject to 35 are distributed equally into 5 intervals of equal length irrespective of the percentage of candidates who obtained these marks while AIU

recommends assigning a fixed percentage of students each of these grade O-3%, A-7%, B-22%, C-36%, D-22%, E-7% and F-3%.

2. The grades in internal assessment and external examinations should be shown separately. If these two must be combined, the internal evaluation should be moderated using the results of external examination as a basis.

3. Both suggest calculating the overall grade to two decimal points so as to allow for a larger number of discriminations for selection purposes.

4. For awarding a degree UGC recommends that a student maintain a minimum grade point average of at least 2 in a course or subject and may be allowed to clear a paper in which he fails later on. While AIU recommends an overall grade of 3 with a minimum grade point average of 2.5 in every subject.

This it is hoped will ensure:

- (1) A more uniform mean of evaluation among different universities.
- (2) A more reliable mean of evaluating achievement.
- (3) Better comparability among disciplines and within a discipline by the use of a common scale.
- (4) Greater internal coherence in the choice of subjects or papers by students.
- (5) Greater mobility of students.

These claims were discussed and evaluated by Palsane and Desai (1976) and studied empirically by Gunasekaran (1982). He had selected a random sample of 50 scripts of a M.Com. paper in Madras University and asked four university examiners to grade the answers to each question in these scripts at two points of time. The findings as reported do not support the following claims:

- (1) Use of full range—The grades awarded to these scripts ranged from A to D, 162 out of these 200 being awarded B or C.
- (2) Better comparability between examiners—The distribution of grades obtained for the four examiners were different even when based on the average of two markings of the same script by the examiner which is not a common practice.
- (3) Comparability within examiners was only moderate, the co-efficients of contingency being .55, .65, .49 and .45 respectively. The maximum attainable co-efficient of contingency for a perfect relationship for 7 rows and 7 columns being 6/7-93.
- (4) The classification errors although not studied would be considerable in view of (2) and (3).

The study although based on a small sample and one paper in a subject demonstrates that 7 point grades may be as ambiguous as raw scores in percentage systems. Thus leave alone validity even reliability may not be improved by changing marks into grades as suggested by UGC and AIU

and being adopted by many universities. Moreover, as we discuss in the next section the proposals ignore the different functions that internal assessment and external examinations should serve and hence different interpretation of scores will be needed for the two. Let us take a closer look at the objectives of internal assessment and external examinations and problems in reporting them.

Objectives of Internal Assessment and External Examinations

Internal Assessment: Internal assessment was suggested to integrated teaching, learning and evaluation. But for reporting of internal assessment norm referenced grades—which indicate the status of an individual with regard to others in the group are suggested both by AIU and UGC which ignore this function. To serve this function teacher/learner need to know how well the students/a student has mastered a particular domain, where they/he is having difficulty and not how well a student is doing relative to others in the group, so what we need are criterion referenced interpretations.

Further, since it is recommended that internal assessment should also be reported along with results of external examination. The grades/marks given by different colleges should be on a common scale of achievement. As the colleges will differ in the ability of groups they draw, the range of ability in groups they draw and would be using different tests, the marks/grades given by them will be very difficult to interpret. Since internal assessment was suggested to measure those skills and abilities also which cannot be tested by a written examination at the end of a course, we cannot use external examination for scaling them. Thus for internal assessment we need marks/grades that have criterion referenced interpretations and take into account the fact that students have responded to different items/questions/situations sometimes at different difficulty levels, by design.

External Examinations: As the examination results are also to be used for selection for a job, admission to a college/course etc. in which number of applicants is very large compared to the number of seats. For this we need some general measure of achievement in an area which may be measured by external examinations. For reporting results of these norm referenced interpretations will be suitable as recommended by UGC and AIU. Both have recommended that the results of external examinations be reported in terms of seven point scale instead of percentage systems in view of large standard error (between 7.5 and 10.5) of marks in the present system of examinations and different range of marks used by examiners in different subjects. However, the key consideration in deciding the number of categories in which performance should be classified are the range and standard error. Gulliksen (1950) recommends that the range of marks between the lowest and highest bound of a grade should be 3-4 times the standard error. But in both the schemes recommended by UGC and AIU, the range of marks in a category is of the same order as standard error. Although the border line errors cannot be avoided completely, but having such a small range compared to the standard

error will mean that many of the students who should be classified in a certain category, their actual score may deviate by more than two categories. Further a small range does not always indicate varying standards of marking but homogeneity of the group. In prestigious courses and institutions the groups are very homogenous, would it be fair to classify many of them as D, E and F because they happened to get a few marks (\pm or \leq standard error) less from others in the group? Ranking such a group would be even more difficult. For interpretability of these grades it is necessary to estimate the standard error of tests, constructed according to a table of specifications agreed to by the examining bodies and then considering the range and standard error decide on the number of categories in which results should be reported.

Thus we have seen that tests for internal assessment and external examinations are to serve different purposes and raw scores need to be interpreted differently. To summarize for internal assessment we need focussed tests to aid in diagnosis of difficulties and guiding teaching/learning and criterion referenced interpretation of raw scores. The major problem is obtaining comparable grades using different tests. And for external examinations we need tests covering a broad segment of the domain and the main issue relating to the number of categories in which results should be reported calls for estimation of the standard error of the score.

Question Banks and Reporting of Results

A key requirement for form of reporting of results is their interpretability. This in addition to telling us what the test measures calls for additional data on the domain of achievement to which the test relates and scores of the group to which the student belongs. As items in an item bank are prevalidated by subject matter specialists and evaluation experts and contain information as to what topic the item relates to and the objective it is measuring. The tests constructed by selecting items from the item bank will have face validity very important for achievement tests. Furthermore as the bank contains a large number of items it enables us to specify a domain/sub-domain well and to construct focussed tests for internal assessment and tests covering a broad segment of achievement for external examinations. However, for ensuring reliability and interpretation of raw scores we need a data base obtained by responses of students to items in the question bank and summarized in a suitable manner.

As the question banks published by AIU are available in many subjects a little investment in modifying them for a particular university by adding and deleting items wherever necessary and try-out of these items will be of value. As in addition to providing data like weaknesses in the instruction or in the format, reasonable time limits, desirable length of the test, it will also provide data which will greatly aid in construction of tests and interpretation of raw scores both for internal assessment and external examinations.

Let us next examine how to collect and summarize data on questions/items in a bank which will help in construction of tests and interpretation of raw scores.

Pretesting of Items in a Question Bank

The pretesting of items is very important as it provides data for designing optimum studies for different uses for which an item bank may be used.

In classical items analysis the main objective is to obtain a description of parameters of individual test items. The most commonly used indices are facility value and discrimination index which indicate the difficulty level of the question and whether it discriminates in agreement with the rest of the test or how well it predicts some external criterion. The most common indices are the proportion of students who pass the items and some measure of correlation with the test or external criterion. The intercorrelation of the items are also sometimes computed. For essay type tests also with or without choice corresponding indices can be computed (AIU, 1977). This information is used for composing test with certain characteristics e.g. mean variance, reliability, validity etc. However, the classical approach of inferring characteristics of tests from these item parameters will not serve us well for tests constructed from item banks. For at the heart of classical theory is the concept of parallel tests and it is mainly concerned with individual differences.

The tests for external examination constructed from items banks will rarely turn out to be parallel. It will be more reasonable to assume such tests to be constructed by stratified random sampling from the bank. So what one needs are characteristics of tests when they are constructed according to a certain design e.g. using a certain number of items selected randomly from each strata e.g. cell/row/column of a table of specifications Generalizability Theory (Cronbach, Gleser, Nanda, Rajratnam, 1972) provides a model which can help in forecasting the precision of estimates when data are collected according to a certain design. It can also consider other sources of error e.g. examiner which may be considerable for essay tests. As a byproduct the estimates of components of variance can be used for studying the precision of estimates for other purposes e.g. curriculum evaluation, assessment of groups, difficulty value of item an (Mahajan, 1983).

For interval assessment also we need models which allow us to estimate the precision of estimates when different students have responded to different items relating to an instructional domain/subdomain, skill or ability. If the domain is well specified and items selected at random and tried out on a random sample of students belonging to a university, Generalizability Theory extended by Brennan (1981) to domain referenced tests can be used to get an estimate of the precision of domain score which is important as the student will be responding only to a sample of items. It can tackle all types of tests, objective, short answer and essay and can also consider other sources of error e.g. scorer which may be considerably for essay tests. It can further

forecast the precision that will be obtained if the number of items is changed in future. The teacher can easily be trained to do it.

However, if the range of difficulty of items relating to a domain is large, a large number of items will be needed to estimate the domain score precisely for all students. Since the time that can be devoted to testing is limited, a more efficient procedure will be to select those items that will measure precisely at a particular ability level or the range of ability in a college and yet have the results on a common scale of achievement for a university. The classical theory or generalizability theory cannot handle it and so we will need to turn to latent trait approaches. Latent trait models under some restrictive assumptions are available for objective tests measuring a unifactor trait (Rasch, 1960, Lord and Novick, 1968) and can be used if computer facilities are available. If latent trait parameters are known, it is possible to estimate the ability level of a student and its standard error for students who may have responded to different items at different difficulty levels. Furthermore the parameters are sample free, so any set of colleges that are willing to cooperate may be used. It is also possible to construct tests which will give a more precise measurement at a particular level of ability with the same number of items. But for this computer facilities and technical expertise will have to be provided by a university.

To summarize the try-out of items in a question bank should provide estimates of components of variance which will enable us to compute the standard error of tests for different abilities/skills/subdomains of achievement using particular number of items which may be different for different students from a question bank and give methods for forecasting standard error if different number of items are used in future using Generalizability Theory for internal assessment. For external examinations it should provide the estimates of the difficulty value of items together with that of standard error of scores on a test. When the tests are constructed by selecting certain number of items at random from each cell and/or column of a table of specifications agreed to by teachers and/or examining boards.

It will also be desirable to provide latent trait parameters using Rasch and/or Lord three parameter model. It will enable the teacher with the help of technical experts and use of a computer to construct tests which match the ability level of their students and estimation of their ability.

Construction of Tests and Reporting of Results

The selection of items for construction of tests from the bank and summarization and interpretation of student's responses to the items will depend on the purpose for which the test is to be used.

Internal Assessment

As suggested earlier the tests for internal assessment should be criterion/domain referenced and ascertain an individual's status with respect to a well

defined behavioural domain. The principal concern in their development is obtaining rigorous and precise domain specifications to maximize the interpretability of an individual's domain score. For domain specification strategies see Popham (1980). Whether the domain is described by a terse behavioural objective or elaborate set of test specifications, its descriptive scheme should communicate with other people just what domain of behaviour is being assessed by the test. In view of the constraints in which internal assessment will be conducted in Indian Universities viz (1) Limited resources—we can at best hope to provide some guidance to teachers for making these tests together with sample items. The teachers who will be conducting internal assessment generally do not even think of instructional objectives clearly. The items in the AIU Question Banks also do not have a descriptive scheme which may serve for the development of criterion referenced tests. (2) The behavioural domain that will be of interest to us is complex (3) The time that can be devoted to testing is limited. The best we can hope is to have tests in which items are closely wedded to clearly stated instructional objectives which Popham (1980) calls as a weak member of the criterion referenced family. The most important consideration for inclusion of an item is its relevance for the instructional objective as judged by a subject matter expert/experts rather than its facility value or discriminatory index. A number of such items may then be given to the student and his mean score or per cent correctly answered by him be taken as his domain score. Before accepting it as satisfactory according to the cut off point agreed upon or as in the behavioural domain, it is important to know the standard error of the score as the student is answering only a sample of items and the difficulty value of items even in tests measuring very simple skills will vary. As the try-out of items in the question bank would have given estimates of these, it is recommended that these be reported along with his domain score taking into account the length of the test or the number of items on which it is based.

External Examinations

When the function of the test is to appraise a broad segment of curriculum the planning becomes more complex. For these we need to make a table of specifications and decide on the following questions.

- (1) What relative emphasis should each content area and process objective receive on the test.
- (2) What type or types of items would be most appropriate to use on the test.
- (3) How long should the test be? How many items should be selected for each cell/column.

These would have to be decided by a pooled judgement of teachers and other administrative constraints. The question bank enables us to select the

items belonging to each cell that have face validity and try-out data on such tests provides an estimate of standard error which indicates in how many categories the results can be reported so that classification errors will be small.

If the university desires a larger number of categories, it should find ways of reducing the standard error by using larger number of items, giving detailed specifications for marking essay type questions or using more examiners for scoring essay tests.

Summary and Suggestions

In this paper we have discussed the proposals made by UGC and AIU in reporting of results for internal assessment and external examinations and some problems with those. Firstly, they have ignored the fact that internal assessment and external examination should serve different purposes and hence call for different interpretations viz criterion/domain referenced for the former and norm referenced for the latter. Secondly, the key issue in deciding the number of categories even for norm referenced interpretations is the standard error of marks which needs to be estimated for tests of certain lengths and conforming to a table of specifications. Even for essay questions direct grading may not be much of an improvement as Gunasekaran (1982) has shown, what are needed are model answers for an O and detailed specifications for other grades agreed to by a group of teachers.

We have further suggested how question banks and try-out data may be used for construction of tests that will serve the purposes of internal assessment and external examinations and will be valid and have known reliability and standard error of marks thus enabling us to decide on the number of categories in which results should be reported in a more scientific manner.

We recommend that Question Banks developed by AIU be examined for their relevance to a particular course for a university and the bank modified by adding and deleting items to cover all the objectives of the course. These items may then be used to make tests measuring particular skills/abilities/subdomains by random sampling of items relating to these and used for internal assessment. The data collected by administration of these to students may then be analysed to give an estimate of the standard error of the marks on those. Similarly for external examinations tests should be constructed that conform to a table of specifications for external examinations and the data on those be analysed to get an estimate of the standard error. The banks and such try-out data will enable us to devise tests whose characteristics are known and also enable us to devise methods of reporting which have little classification error.

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Notes from Research

STRESS—EXPERIENCE OF HIGHER EDUCATION STUDENTS

Irrespective of our resourcefulness, all of us experience constantly "stress" because of our day-to-day coping with problems. Our motives are not always easily satisfied. There are obstacles to be overcome; choices to be made and delays to be tolerated. Socially too, we have to adjust with life in ever changing social patterns. As is evident from our contemporary societies, things are changing, values are changing, standards and mores are changing. Yes, change is inevitable. For any given society or culture, rapid change must occur and usually occurs frequently or "constantly".

In such a change if certain patterns in one field of action collide with trends in another—for ex: the same beginning hour for all to go to school/colleges and offices, becomes more and more consistent with urban growth, in overloaded transportation facilities and traffic congestions—gives rise and increases strain in the minds of individuals. Such a thing is known as the "strain caused from lack of synchronization of types and rates of change".

Demographic imbalances, the hazards of life in the seen and unseen environment, the level of sustenance and physical comfort to the much more complex and interactive relation between technological man and an altered environment that contains old and new lethal hazards—all leave opportunities for strain.

Any social order is a moral order and non-conformity in the quest of new knowledge to this moral order occurs in all societies, thus producing strain for the generations.

Bureaucratic set-up gives rise to strain. Competition, serves primarily in complex organisations to determine merit. Administrative organizations provide opportunities or orderly competitions and thus give rise to "strain".

Thus, inevitably the modern man is constantly living with strain producing situations. Each of us tend to develop characteristic ways of responding whenever our attempts to reach a goal are blocked. Specially, the nature of these characteristic response patterns to frustrating solutions determines, to a large extent, the adequacy of our adjustment to life. One such consequential or frustrating situation is "Displaced aggression" wherein the individual cannot satisfactorily express his aggression against the source of frustration. This is what exactly is happening in the present generation of youth. To study the "experienced stress level" of youngsters is the purpose of the present study.

Hypothesis

It is hypothesized that in the students going out of Osmania University, the "stress" experienced *has not* reached those violent proportions in which they become a liability to self or society.

Experimental Design

In view of the limitations both in terms of resources and the very problem itself, it was decided to contact the students having passed the final year Post-Graduate exam who have also completed attending interviews for jobs, without being selected. From the college records it was also found that whether the students being included were aspirant participants in activities like Students' Union elections, cultural activities, etc., or not.

As this was purely a normative and limited survey, students being matched on the above aspects have numbered out to be eighty and for statistical convenience, only 75 were picked out of them at random. This constituted the sample for further investigation.

Administration of Tool

Five questions were developed for the purpose and an objective report was requested from the sample. Specifically, each question depicting a situation in which the member of the sample had a chance to participate, was selected from individual area of day-to-day situations depicting some specific category or aspect of life. The areas thus covered belong to "economic", "ethnic", "political", "personal", and "social" situations, which mainly are supported to promote situations of stress.

Lengthy questionnaires may distort the real opinion due to the boredom they develop as they get completed, and as such only five questions concentrating over the factual information were planned. They were circulated to the sample with the following instructions:

"Five situations are given below. Explain by bringing your views into conformity with reason about each situation by considering your self as the candidate. You are requested to assume that you are fully qualified for meeting the situation. Please be specific and brief in answering:"

- Situation No. 1 :* You have appeared for an interview but was not selected—the reasons may be
- Situation No. 2 :* You have applied for a scholarship but was deniedbecause....
- Situation No. 3 :* You have appeared for a committee's/College leadership's election seat, but was denied — may be because
- Situation No. 4 :* You have applied for a seat in an academic/Professional course in which you were genuinely interested, but was not given the seat. The reason may be
- Situation No. 5 :* You wanted to participate in the competitions (Sports, Games, Cultural activities etc.) conducted by your College Authorities but was not permitted by them. It may be due to

All these situations with place for ten sentences were cyclostyled and got distributed among 75 students and were got back for analysis.

Analysis and Inferences

The first situation was termed to cover the "Economic aspects" followed by "Ethnic", "Political", "Personal" and "Social" aspects in the 2nd, 3rd, 4th and fifth situations. Evidently the situations selected were from day-to-day life and are suggestive for a wider work in future.

The responses of the sample were analysed for establishing the "Rationalizing process" used by them. The procedure adopted was as follows:

- (a) If the response of the individual was found to be realistic and true, then it was identified as "Normal Rationalization".
Ex: I was denied scholarship because I did not score the requisite number of marks for such scholarship....
- (b) If the response is realistic and prevalent in the area dominantly and is not true, yet it was considered as "Normal Rationalization" only.
Ex: I was not selected even though I am fully qualified because the Officer-in-Charge does not like intelligent people who may out-beat him....
- (c) Statement which were irrational were marked as "Not Normal".
Ex: "I was denied the College Students' leadership seat, because the Students' Union Advisor and the candidates to whom seats were given, belong to the same political ideology which is trying to sabotage the majority's interests"....
- (d) Statements which are ridiculous and completely irrational were identified as "Mentally Ill".
Ex: I did not get the seat/job because the present set-up of Government, Selectors etc., all have been purchased by some Foreign Government whose agents desire to see all of my people to get wiped out of my country

After duly scoring them, the results were tabulated for more comprehension.

Table 1

SHOWING THE NUMBER OF INDIVIDUALS FALLING IN EACH CATEGORY

<i>Sl. no.</i>	<i>Statement No.</i>	<i>Normal</i>	<i>Not Normal</i>	<i>Mentally Ill</i>
1.	1	38	35	2
2.	2	52	23	—
3.	3	40	35	—
4.	4	54	21	—
5.	5	75	—	—

It is evident from the above table that to a large extent students of the sample were able to 'rationalize' their failures. Individuals who were listed under "not normal" group, however, gave raise to a few delicate and embarrassing issues. This needs a separate study, for which one hypothesis is that "probably they gave "not normal" responses due to the wide publicity and propaganda over the mass media about the Caste-based-clashes, Misuse of Reservations, Atrocities being committed on weaker members, etc., all of which

or some of which are highly exaggerated." Majority are still "Normal" in their understanding about their failures.

Situation-wise analysis is furnished below for a wider understanding of the problem:

Situation No. 1.: You have appeared for an interview but was not selected—— the reasons may be

This was given 38 responses for "normal" group and 35 for "Not normal" group. This exhibits the dangerous trend of our youth becoming "not normal" soon, just less by 3 responding members. It can easily be inferred that the job selection process is becoming under more and more attack by the new generation. It may also be due to the increasing unemployment (due to mechanisation, a spurt in qualified aspirations etc.) and also may be due to scrupulous bureaucratic red-tape-infected procedures for job-placements. These reasons when internalised, have dragged the youngsters too far and due to psychological stress two individuals have been found to give "mentally ill" responses. The stress mounting on young minds is indicative for a quick over-haul of the system of "Economics", of course after some more of similar studies.

Situation No. 2.: You have applied for a scholarship but was denied ---because

Here 52 members responded normally. Still 23 "not normal" members also existed who constituted the 30.6% of the total sample. Ethnically this group belongs to "Other castes—Forward classes" (as per the list of Social Welfare Department, A.P.). This group of students gave evidence that made them to be grouped under "Not normal" category. Only Forward class group of students behaving in this manner, needs some immediate attention for further investigation in order to save our students from "Stress" paving way to undesirable consequences.

Situation No. 3.: You have appeared for a committee's/College leadership's election seat, but was denied --- may be because

The responses are just equal in number to that of Situation number 1, under "not normal" category, in which the unemployment tensions contributed for irrational responses. Similarly in this situation also students are behaving "not normally". Their main conviction for such a belief is that "the political parties ruling the country are having an edge over the say even in the College students' leadership elections". Keeping the purpose for which such elections were originally planned, necessary healthy steps must be put forward by both The Central as well as the State Governments immediately in case if they want to save the youth from becoming mentally ill.

Situation No. 4.: You have applied for a seat in an academic/Professional course in which you were genuinely interested, but was not given the seat. The reasons may be

The responses showed almost similar tendencies that were given for Situation No. 2. About the allotment of seats the students feel that the policy of "Reservation" etc., is doing more harm than help to them. This amounts, in their views, "Sacrifice of quality for the sake of quantity". The number of responses received were 21 but were all from the "Forward class group" once again. Some steps should be taken up by the authorities concerned for arresting this trend from spreading.

Situation No. 5.: You wanted to participate in the competitions (sports, Games, Cultural activities etc.) conducted by your College Authorities but was not permitted by them. It may be due to

No special observation was made. Responses were 100% normal. May be they did not want to participate (as the trend now a days is to get engaged in other activities rather than in sports & Games) or they know their capacities well because these activities require visible abilities and capacities from the participants. However the process of rationalization is seen in all the students which provokes for the conclusion that "Factual deeds does not arise doubts".

Conclusions

By close observation of the above discussion it may be said that the present study yielded the following conclusions:

- (1) The present Higher Education students are loosing "Normal thinking" with respect to "Job-placement" procedures;
- (2) The students belonging to Forward Class are becoming "not normal" due to the policy of "Reservations" both in granting scholarships and also in allotting seats.
- (3) Political vindetta is rampant. Majority of the sample have given proof of a sense of "blaming others". They hold political parties as responsible to a large extent, for such interference in the college internal aspects.
- (4) Interestingly majority possess a perfect "Self-perception" and have given evidence of this aspect with regard to the Extra-curricular activities.

M. Sree Rama Murthy

A COMPARATIVE STUDY OF ANXIETY LEVEL AGAINST GRADUATE, POST GRADUATE AND PH.D. STUDENTS

Anxiety is a common symptom found in different populations and it is specially so among students. It may be due to a number of factors, such as growing problem of unemployment, insecurity, desire for competition etc. The term Anxiety is most often used to describe an unpleasant emotional state or condition which is characterized by subjective feelings of tension, apprehension and worry, and by activation or arousal of the autonomic nervous system. An anxiety state is evoked whenever a person perceives a particular stimulus or situation as potentially harmful, dangerous or threatening to him. Anxiety state varies in intensity and fluctuates over time as a function of the amount of stress that impinges upon an individual.

The term anxiety is also used to refer to relatively stable individual differences in Anxiety Proneness as a personality trait. Trait Anxiety is not directly manifested in behaviour but may be inferred from the frequency and the intensity of an individual's elevation in anxiety state over time. Persons who are high in Anxiety-trait are disposed to perceive the world as more dangerous or threatening than low Anxiety trait individuals.

In a developing country like India the problem of unemployment may be viewed as one of the undesirable situation for youth. Unemployment is not entirely an economic problem but also there are other various problems linked to it, such as psychological maladjustment, loss of control, manifestations of tension, associated health problems, aggressive behaviour and low self image, etc.

The aim of the present study is to find out the level of Anxiety amongst different levels of students—Graduate, Post graduate and Ph.D.

Methodology

Sample: 75 students of Roorkee University (Boys), 25 Graduate, 25 Post Graduate and 25 Research students were selected randomly for the study.

Tool Used: Sinha Anxiety scale was employed to assess Anxiety level. The split half reliability of the test is .92 and validity .69 (correlation with Taylor MAS). The scale consisted of 100 items. For each item there were two alternative answers viz. 'Yes' or 'No'.

The students of Graduation & Postgraduation levels were contacted in their classes and were requested to participate in this study. The research students were contacted individually in their hostels. They were given instructions and test sheets to be filled.

Results and Discussion

The mean and standard deviation of the scores of all the groups were calculated which are given below. The significance of differences between means of Anxiety scores are reported in Table 2.

Table 1
MEAN SCORES AND STANDARD DEVIATION

<i>Students</i>	<i>N</i>	<i>Mean</i>	<i>S.D.</i>
Graduate	25	24.52	7.58
Postgraduate	25	23.2	10.89
Research Scholar	25	32.44	11.53

S.D. = Standard Deviation

Table 2
SHOWING T-TEST VALUES BETWEEN GRADUATE, POSTGRADUATE AND PH.D. STUDENTS

<i>Students</i>	<i>t-Test</i>
Graduate Vs. Postgraduate	0.49
Postgraduate Vs. Ph.D. Students	2.91*
Graduate Vs. Research Scholar	2.81*

*Significant at .01 level.

The difference between Graduate and Post Graduate students was found to be not significant. However, difference between Post Graduate and Research students and Graduate and Research students was found to be significant at .01 level.

From this study it can be inferred that the Research students are more anxiety ridden than the Post Graduate and Graduate students. The problem of unemployment, and competition may be attributed as one of the factors causing Anxiety among them. But it is not easily explainable without further research as to why a Research student is more anxiety ridden than Graduate and Post Graduate students. One argument, however, could be that research students can not much longer take shelter and solace of 'studentship' as dependents and are nearer the time when they must step out into real life and threats, perhaps, loom larger.

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**N.K. Seth, Swarn Pratap and
Naveen Kumar Gupta**

JOB SATISFACTION AND ORGANIZATIONAL CLIMATE AMONG UNIVERSITY TEACHERS

Job satisfaction refers to the way one feels about events, people and things. According to Blum (1956), "Job satisfaction is the result of various attitudes the person holds toward his job, towards related factors and towards life in general". Job satisfaction has many interrelated factors viz. working conditions, job security, group structure, compensation, and supervision etc. It is also a function of an individuals level of aspiration. From this it follows that a worker with a high level of aspiration is likely to be less happy whereas another with a moderate level of aspiration can derive more happiness from the same job and that dissatisfaction increases when the gap between aspiration and its attainment increases. Human behaviour is caused by two types of factors. Some are external and some are internal. The conditions of work, tools, equipments are external factors and motivation and frustration are internal factors.

Bullock (1952) has defined "Job satisfaction is the result of various attitudes possessed by an employee towards his job. These attitudes are related to specific factors such as wages, conditions of work, advancement opportunities, prompt settlement of grievances, fair treatment by employers and other fring benefits. Job satisfaction may be defined as an attitude which results from a balancing and summation of many specific likes and dislikes experienced in connection with the job.

Individual personalities and job requirements interact to produce a climate that can be significant to both the individual and the organization. By climate we mean those characteristics that distinguish one organization from other organizations, that influence the behaviour of employees in the organization. In much the same way that we can describe the atmosphere of the place we live in, we can describe work environments on the job. We are interested in the psychological atmosphere or 'climate' of these places because it is related to the problems of satisfaction and dissatisfaction, to the problems of success and failure.

A considerable amount of recent literature on the organizational behaviour has been concerned with the topic of organizational climate (Frederickson, 1966; Litwin & Stringer, 1968; and Frederickson & Marguiles, 1969). Most researchers agree that organizational climate can be considered as employees' subjective impressions or perceptions of his organization. According to Schneider & Hall (1972), climate perceptions emerge as a result of the person's numerous activities, interactions, feelings and other daily experiences in the organization. They also suggest that perceived climate may be related to a number of outcome variables such as individual job satisfaction, involvement and performance. In this view, climate is an intervening variable, caused by independent variables such as job activities and organization structure and in turn influencing a variety of output variables which are important to the organization as a whole as well as to the individual employee. Much of the research on climate has conceptualized it as an independent variable rather than as an intervening variable and has focussed primarily on the relationship between climate and such variables as satisfaction and performance.

Objective

The main objective is present study to find out any significant difference between Lecturers, Readers and Professors on the level of job satisfaction and the perception of organizational climate.

Method

Sample: The sample in the present study consisted of one hundred twenty teachers (55 Lecturer, 40 Readers, and 25 Professors) from two universities located in the State of U.P. The average age of the teachers is 40.27 years, and the average experience is 11.42 years.

Instruments: (i) *Job satisfaction scale:* In the present study, a scale constructed by H.C. Ganguli (1954) was used to measure job satisfaction/dissatisfaction. This questionnaire measures, eight dimensions of job satisfaction viz. salary, job security, nature of work, senior-junior relationship, advancement, working conditions, unions, and communication.

(ii) *Organizational Climate Scale:* Organizational climate scale which was used to measure the perception of organizational climate G.H. Litwin & R.A. Stringer (1968) scale. This scale measures nine factors viz. structure, responsibility, reward, risk, warmth, support, standard, conflict, and identity.

Results and Discussion

Table 2, reveals that so far as job satisfaction is concerned the groups of Lecturers and the groups of Readers do not show any significant differences. Similar is the case between the groups of Readers and the groups of Professors. For that purpose also the groups of Lecturers and the groups of Professors show no significant difference. Many researches show that the factors determining better job satisfaction are as follows: nature of work, hours of work, interest in work, pay, leave policy, praise and blames, fellow workers, opportunity on the job for promotion and advancement, and personal adjustment. My present study reveals that Lecturers, Readers, and Professors show no significant differences upon the factors mentioned above.

Table 1

MEAN AND STANDARD DEVIATION OF SCORES ON JOB SATISFACTION AND ORGANIZATIONAL CLIMATE

Groups	N	Job satisfactions core		Organizational climate score	
		Mean	S.D.	Mean	S.D.
Lecturers	55	76.28	18.12	108.32	21.27
Readers	40	81.09	16.43	112.71	19.37
Professors	25	75.67	14.36	109.03	17.87

Table 2, reveals that so far as organizational climate is concerned the groups of Lecturers and the groups of Readers do not show any significant difference. Similar is the case between the groups of Readers and the groups of Professors. For that purpose also the

Table 2

SHOWING 'T' TEST BETWEEN (LECTURERS, READERS AND PROFESSORS) IN TERMS OF JOB SATISFACTION AND ORGANIZATIONAL CLIMATE

<i>Groups</i>	<i>Job satisfaction 't' value</i>	<i>Organizational climate 't' value</i>
Lecturers vs. Readers	1.35 N.S.	1.05 N.S.
Readers vs. Professors	1.40 N.S.	0.78 N.S.
Lecturers vs. Professors	0.16 N.S.	0.16 N.S.

N = Number of teachers

S.D. = Standard Deviation

N.S. = Not significant.

groups of Lecturers and the groups of Professors show no significant differences. Many researches show that the factors determining better organizational climate are as follows: Policy and promotion opportunity, openness of upward communication, reward, support, lack of conflict, fair treatment, motivation, employee-employer relationship, better administration, leadership style, and lack of hinderance etc. My present study reveals that Lecturers, Readers and Professors show no significant differences upon the factors mentioned above.

Table 3

PERCENTAGE OF TEACHERS IN DIFFERENT LEVELS OF JOB SATISFACTION

<i>Satisfaction level</i>	<i>Percentage of teachers</i>
Satisfied	56
Average	31
Dissatisfied	13

Table 4

PERCENTAGE OF TEACHERS IN DIFFERENT LEVELS OF PERCEPTION OF ORGANIZATIONAL CLIMATE

<i>Perception of Organizational climate</i>	<i>Percentage of teachers</i>
Favourable	49
Neutral	37
Unfavourable	14

Majority of the teachers, that is 56 per cent have indicated satisfaction with their jobs. Similarly, 49 percent teachers have perceived the organizational climate as favourable. The distribution among teachers at different levels of job satisfaction and different levels of perception of organizational climate are shown in Table-3 and 4.

Conclusions

The study reveals the following results :

- (i) There is no significant difference between Lecturers, Readers, and Professors on the level of job satisfaction and perception of the organizational climate.
- (ii) Most of the teachers have indicated satisfaction with their jobs and also most of the teachers have better organizational climate.

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Surya Kumar Srivastava

VALUE STRUCTURE OF HIGHER EDUCATION AND THE UNIVERSITY TEACHERS

In recent years, considerable damage has been caused to the public property by the violent agitations organised by the students. These disturbances express the worries, fears, anxieties of a large number of students in this country. It seems that our educational system is afflicted by many serious ills. The aggressive acts organised by the student community in different parts of the country show that institutions of higher learning are not yielding the expected results to the building of nation. It is the persistent frustration among students whose sources not difficult to trace-out is responsible for the existing unrest in the universities and colleges. The aggression resulting from frustration finds expression in different forms, some of the factors responsible for this state of affairs have been identified as

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absence of satisfying outlets, insecurity generated by the uncertainties of future employment, unplanned switchover to regional languages as medium of instruction, hierarchical educational administration, financial strains and constraints, courses unresponsive to the needs of the students, establishment of sub-standard colleges and Universities, existence of student wings of various political parties, Unbridled and popularity oriented admission policy, the existence of teacher politicians, lack of adequate teaching facilities, educational system unrelated to the needs of the country and lack of development of a sense of social responsibility among the students.

It has been generally recognised that the present system of higher education has hardly any relevance in the present context of our turmoil and is primarily limited to the award of degrees. It does not give any work experience to the students and is primarily theory oriented.

The present paper attempts to find out the attitudes of Agra University teachers toward the value structure of higher education. Every teacher, to a considerable extent, holds certain beliefs and attitudes toward different aspects of higher education. Such beliefs and attitudes are shaped by his sex, age, family life, economic condition, membership to different socio-cultural groups, satisfaction and dis-satisfaction of wants and experience of success and failure in teaching career. The results of the study throw some light on the value of higher education as perceived by the teachers engaged in imparting higher education to the students. It is likely to enhance our understanding into the problem posed earlier in this paper.

Purpose of the Study

It is attempted to find out the attitudes of teachers belonging to the faculties of arts, science, commerce, medicine, engineering, law and agriculture toward the value of higher education. Besides this, a comparison of attitude of teachers toward value of higher education has also been made on the basis of variables like sex, age, teaching experience, academic achievements, satisfaction/dissatisfaction with family life, satisfaction/dissatisfaction with present system of higher education, experience of success/failure during teaching career, feeling about the situation in the country, satisfaction/dissatisfaction with personal economic condition and satisfaction/dissatisfaction with working conditions.

Methodology

For collection of data, 300 teachers serving in various colleges affiliated to Agra University were selected on the basis of systematic sampling.¹ The information was collected through a structured questionnaire and attitude scale. The said attitude scale was developed on the lines of Thrustone and Chave scale of 'Method of Equal Appearing Intervals'² (1929). In developing this scale a number of statements relating to the value of higher education were collected and 50 judges who have consisting of experienced teacher, leading lawyers, engineers, politicians and senior doctors were approached to sort out each of statements in terms of degree of favourability and unfavourability on a 9 point scale. The end of this scale represents highest possible degree of favourability and the other extreme represents highest possible degree of unfavourability. The mid point represents the neutral zone. The scale value, and Q value³ of each statement has been calculated. Finally those statements which were uniformly distributed on the scale and possessed low Q values (having lesser degree of ambiguity) were selected for inclusion in the attitude scale. The attitude scale so devised included in it 20 statements having implications for higher education. These statements were presented before the 300 subjects with two possible responses in terms of agreement and disagreement. For the measurement of attitude of the informants only those statements with which they agreed were taken into account and responses of the nature of 'disagreed' were ignored. In this manner the attitude scores⁴ were calculated for each teacher. On the basis of individual scores mean score for the whole group of subject was calculated.

Findings

By applying the method discussed in the preceding paragraph we found that the attitude of teacher towards the value of higher education is negative as is indicated by the mean attitude score ($M=3.3$). The following tables show (1) mean and standard deviation of attitude of teachers on the basis of different variables arranged in column 1 of Table 1 and (2) critical values and significant limits of differences between mean of attitude of teachers according to different variables (variables shown in column 1 of Table 2).

Table 1

MEAN AND STANDARD DEVIATION OF ATTITUDES OF RESPONDENTS ON THE BASIS OF DIFFERENT VARIABLES

<i>No.</i>	<i>Group of teachers on the basis of variables</i>	<i>Number of teachers</i>	<i>Mean</i>	<i>Standard deviation</i>
1.	Groups on the basis of sex			
	(1) Male	258	3.3	1.7
	(2) Female	42	3.6	1.5
2.	Groups on the basis of age (in years)			
	(1) 25-45 years	200	3.9	2.0
	(2) 45-65 years	100	2.2	1.2
3.	Groups on the basis of teaching experience			
	(1) Low (0-10 years)	112	4.3	1.9
	(2) Moderate (10-20 years)	128	3.1	1.3
	(3) High (20-30 years)	60	2.1	1.2
4.	Groups on the basis of academic achievement			
	(1) Low	75	4.9	1.8
	(2) Average	185	3.0	1.3
	(3) High	40	2.2	0.9
5.	Groups on the basis of satisfaction/dissatisfaction with family life			
	(1) Satisfied	185	3.9	1.7
	(2) Dissatisfied	99	2.4	1.0
6.	Groups on the basis of satisfaction with present system of higher education			
	(1) Satisfied	40	4.8	2.0
	(2) Dissatisfied	260	3.1	1.5
7.	Groups on the basis of experience of success/failure during teaching career			
	(1) Failure	67	2.0	1.9
	(2) Success	233	4.8	1.2
8.	Groups on the basis of feelings about the situation in the country			
	(1) Good	44	5.7	1.7
	(2) Bad	256	2.2	1.3
9.	Groups on the basis of satisfaction/dissatisfaction with personal economic condition			
	(1) Satisfied	180	4.0	1.5
	(2) Dissatisfied	103	2.2	1.2
10.	Groups on the basis of satisfaction/dissatisfaction with the working conditions			
	(1) Satisfied	95	4.6	1.8
	(2) Dissatisfied	205	2.7	1.7

Table 2

TABLE SHOWING CRITICAL RATIOS AND SIGNIFICANT LIMITS OF DIFFERENCES BETWEEN THE MEAN OF ATTITUDES OF TEACHERS ACCORDING TO DIFFERENT VARIABLES

No.	Groups of teachers on the basis of variables	Critical ratio	Level of significance
1.	Groups on the basis of sex (Male and Female teachers)	1.0	.05
2.	Groups on the basis of age (25-45 years and 45-65 years)	8.0	.05
3.	Groups on the basis of teaching experience		
	(i) Short teaching exp. and moderate teaching experience	6.0	.05
	(ii) Short teaching experience and long teaching experience	9.1	.05
	(iii) Moderate teaching experience and long teaching experience	5.0	.05
4.	Groups on the basis of academic achievement		
	(i) High and Low	11.2	.05
	(ii) High and Average	4.0	.05
	(iii) Average and Low	9.5	.05
5.	Groups on the basis of satisfaction/dissatisfaction with family life (satisfied and dissatisfied)	7.5	.05
6.	Groups on the basis of satisfaction/dissatisfaction with present system of higher education (satisfied and dissatisfied)	5.1	.05
7.	Groups on the basis of experience of success/failure during teaching career (success and failure)	11.2	.05
8.	Groups on the basis of feeling about the situation in the country (good and bad)	12.5	.05
9.	Groups on the basis of satisfaction/dissatisfaction with personal economic condition (satisfied and dissatisfied)	9.0	.05
10.	Groups on the basis of satisfaction/dissatisfaction with working conditions (satisfied and dissatisfied)	9.5	.05

Table 1 and Table 2 reveal that :

- (1) Both male and female teachers hold highly negative attitude towards the value of higher education. The difference between attitude of these two groups of teachers is also not significant ($CR=1.0$). Degree of heterogeneity in both the groups is similar and negligible.
- (2) Teachers both in the age group of 25-45 years and 45-65 years have a negative attitude toward the value of higher education, although the degree of negativity is higher in senior ones. The difference in the mean of these two categories is significant ($CR=8.0$). Degree of heterogeneity is greater among the teachers in the age group of 25-45 years ($sd=2.0$) compared to the senior ones ($sd=1.2$).
- (3) All the teachers of the three different groups of teaching experience showed a negative attitude toward the value of higher education, although the degree of negativity is highest ($M=-2.1$) among those who have high teaching experience. The difference in the attitudes of these three groups are significant. Teachers having low teaching experience were more heterogeneous ($sd=1.9$) in their attitudes toward value of higher education than those who have high teaching experience ($sd=1.2$).
- (4) Teachers having high academic achievement were strongly negative ($M=-2.2$) in their attitudes toward the value of higher education, whereas teachers having

low academic achievements showed slightly favourable attitude ($M=4.9$). The difference in the attitudes of these three groups of teachers is significant. Teachers having high academic achievement were least heterogeneous ($Sd=0.9$) in their attitude.

- (5) Both classes of teachers satisfied as well as dissatisfied with their family life held a negative attitude toward the value of higher education. The mean difference of the teachers ($CR=7.5$) of these two classes is significant. In terms of degree of heterogeneity, the two groups are dis-similar as the standard deviation from the mean in respect of these two groups is different. Those teachers who were dissatisfied with family life were less heterogeneous ($Sd=1.0$) in their attitudes compared to the satisfied ones ($Sd=1.7$).
- (6) A negative attitude ($M=3.1$) was expressed by those teachers who were dissatisfied with the present system of higher education, while a slightly positive attitude ($M=4.8$) was showed by satisfied ones. The difference in the attitudes of these two groups of teachers is significant ($CR=5.1$). Degree of heterogeneity was found more in the attitude of teachers who were satisfied with present system of higher education compared to the dissatisfied one.
- (7) Teachers who had experienced failure in their teaching career held strongly negative attitude ($M=2.0$) whereas those who had experienced success showed slightly positive attitude ($M=4.8$). The difference in the mean of these two groups of teachers is highly significant ($CR=11.2$). Degree of heterogeneity is more ($Sd=1.9$) among the attitude of those teachers who had experienced failure than those who had experienced success teaching career.
- (8) Teachers having satisfactory feeling about the contemporary political situation in the country showed positive attitude ($M=5.7$) toward the value of higher education while teachers having unsatisfactory feeling have expressed a strongly negative attitude ($M=2.2$) toward the value of higher education. The difference in the mean of attitude of these two groups of teachers is highly significant ($CR=12.5$). Teachers showing satisfactory feeling were slightly more heterogeneous ($Sd=1.7$) in their attitude compared to the dissatisfied one.
- (9) Both groups of teachers satisfied as well as dissatisfied with personal economic condition hold a negative attitude toward the value of higher education, although the degree of negativity is higher among the dissatisfied teachers. The difference in the attitude of these two classes of teachers is significant ($CR=9.0$). The deviation from the mean in the attitude of teachers in terms of degree of heterogeneity is not very remarkable.
- (10) Strongly negative attitude ($M=2.4$) was expressed by those teachers who have dissatisfied with the working conditions provided in the institutions of higher learning, while slightly positive attitude ($M=4.6$) was expressed by the satisfied ones. The difference in the mean of attitude of these two groups of teachers was found to be significant ($CR=9.5$). In terms of degree of heterogeneity in the attitude, these two categories of teachers are similar to a great extent.

Conclusion

Some observations by way of final may be put as under :

- (1) Most of the University teachers hold a strongly negative attitude toward the value of higher education.
- (2) Difference in the attitude of male and female teachers toward the value of higher education is not significant. Both have negative attitudes.
- (3) Teachers of different age groups have a negative attitude toward the value of higher education.
- (4) The amount of negativity in the attitude of teachers increases with the increase in teaching experience.

- (5) Low academic achievement groups of teachers held slightly favourable attitude while high academic achievement group of teachers held strongly negative attitude toward the value of higher education.
- (6) Teachers satisfied as well as dissatisfied with family life had a negative attitude toward the value of higher education.
- (7) Those teachers who were dissatisfied with present system of higher education held negative attitude toward the value of higher education while slightly positive attitude was expressed by satisfied ones.
- (8) A strongly negative attitude was expressed by those teachers who experienced failure during their teaching career while slightly positive attitude was expressed by those who had experienced success.
- (9) Attitudes of teachers toward the value of higher education seemed to be dependent on nature of their feeling about contemporary political situation in the country.
- (10) Satisfaction or dissatisfaction with personal economic condition of the respondents had no influence on the attitude toward the value of higher education.
- (11) The degree of satisfaction or dissatisfaction with the existing working conditions provided in the institutions of higher learning seemed to have partially affected the direction of their attitudes.

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Sunila Gupta

VARIATIONS IN ECONOMIC POSITION OF COLLEGE TEACHERS BY COLLEGE MANAGEMENT, SEX AND CASTE

The aim of this paper is to identify the economic background of teacher recruits in government and private degree colleges affiliated with Andhra University, Waltair. The differences in the economic background between sexes of college teachers were also investigated. As further aim of the study, the economic variations among the teachers have been related to their caste background.

Data and Sample

This is essentially an empirical study. The data were collected by one of the authors as part of his Ph.D. research and the materials are in the process of analysis. The sample of this study entitled: "Socio-Economic Background, Communication and Alienation among College Teachers" consisted of 727 undergraduate college teachers working in the affiliated colleges of Andhra University. A 50 percent sample (42) of the colleges from a total number of 83 was taken depending upon (a) the age of the college and (b) the type of management (Private or Government) as the two criteria of selection. In designing the sample for this study it appeared desirable to give particular attention to these two factors, assumed to influence the structure or the composition of teachers. There are, in the sample, 27 privately

managed colleges and 15 government colleges. And in the whole sample of 727 teachers, the respondents belonging to the government colleges are 206 and those working in private colleges are 521. From each of the 42 colleges selected, 50 percent of the teachers on pay roll were selected for the final study. This selection was made from the department-wise faculty lists prepared on the spot at each college. The names of the teachers in each department of the college were arranged according to their seniority and every alternate name was picked up as respondents for the sample. About 2900 college teachers were working in all the 83 colleges and out of this total universe, 727 teachers (approximately one-fourth) were selected for the study. The data were collected in the months of January, February, March and April 1981 by one of the authors, himself a college teacher, who visited personally each of the colleges to collect the required data from the selected respondents.

Measurement :—

The measurement procedures of economic variables are briefly explained below:

Earning Member Ratio: Earning Member Ratio was measured as an interval variable by dividing the number of earning members in the respondent's family by total member strength of the family. This is taken as an index of the income-earning strength of the respondent family. Respondents with high ratio of earning members in their families are assumed to be relatively more sound economically.

Per capita Family Income: This is an interval variable computed by dividing the total income of the respondent family from all sources by the total family size. This also serves as another measure of the economic well-being of the respondent family. The correlation between Earning Member Ratio and Per Capita Family Income in this sample is 0.653, which is significant at 1 per cent level for 725 d.f.

Level of Living Index: A composite index of level of living was constructed on an interval scale based on several items of information. This constitutes a measure on the consumption side—which also represents another indirect indicator of the economic position.

(a) The respondent's class position was determined and scored from 5 to 1, based on the respondents own self-ratings. A score of 5 was assigned for top class, 4 for upper class but not top, 3 for middle class, 2 for lower class and 1 for lowest class.

(b) The respondent was also asked to rate his present locality of residence in terms of house rent paid. The ratings were from 5 to 1-5 for top class residential locality, 4 for upper but not top residential locality, 3 for middle class residential locality, 2 for lower class residential locality and 1 for lowest class residential locality.

(c) Apart from the economic status of the locality of residence, the respondents have also rated their residential houses, own or rented, in terms of the rupee value of the house. The ratings were again from 5 to 1, with 5 for top class house and 1 for the lowest class house.

(d) These three ratings, namely his self-rated class position, his economic rating of the locality of residence, and the self-rated value of the house were combined to yield a single summary score to measure the level of living index.

(e) A fourth item was also added to this index with scores given for household possessions—a score of one each for tape-recorder, record player, fridge, air cooler, grinder/mixi and scooter/motor vehicle. Thus with the scores for household possessions added, the composite level of living index, now ranges from 3 to 21 for any respondent.

The correlation of the composite level of living index with earning member ratio is 0.094 which is significant at 5 per cent level for 725 d.f. and its correlation with per capita Family Income is 0.143, which is significant at 1 per cent level for 725 d.f.

Results and Discussion

Earning Member Ratio: It has been found that the average earning member ratio for the entire sample is 0.37, whereas for the government college teachers it is 0.30 and for the private college teachers it is 0.40. This shows that the private college teachers have probably a favourable edge over the government college teachers in respect of additional earners supplementing the family income. At test was conducted to determine the statistical significance of the difference in average earning member ratio between government and private college teachers. The obtained 't' value² of 2.63 is highly significant showing that the private college teachers are relatively in a more favourable economic position, in comparison with the government college teachers, in having additional earners supplementing the family income. Their dependency load was lower than that of government college teachers. The number of earning members other than the respondent was also identified. The particulars are presented in table 1 below.

Table 1

NUMBER OF EARNING MEMBERS OTHER THAN THE RESPONDENT FOR THE TOTAL SAMPLE OF COLLEGE TEACHERS (N = 727) BY COLLEGE TYPE

Sl. No.	No. of Earning Members other than the respondent	Frequency and Percentage		
		Teachers in Govt Colleges (N = 206)	Teachers in Private Colleges (N = 521)	Total (N = 727)
1	2	3	4	5
(a)	1 Earning Member	59(76.62%)	194(81.51%)	253(80.32%)
(b)	2 Earning Members	14(18.18%)	36(15.13%)	50(15.87%)
(c)	3 Earning Members	2(2.60%)	5(2.10%)	7(2.22%)
(d)	More than 3 earning members	2(2.60%)	3(1.26%)	5(1.59%)
		77	238	315

From the above table we see that out of 206 respondents drawn from the government colleges 77 respondents reported one or more earning members in their family. Their proportion works out to 37.38 per cent. By comparison we see from the table that there are 238 respondents reporting earning members in their families, out of the private college teachers' sample of 521 respondents. Their percentage is calculated at 45.68. This comparison shows the slight edge of the private college teachers over their counterparts in the government colleges in respect of having earning members in their families to ease their economic burden or dependency load. Taking the 77 respondents in the government colleges as the base figure, we find that 77 per cent of such respondents had one earning member in the family, whereas the comparable figure for the private colleges is 82 per cent. Similarly 18 per cent of the total reporting respondents in government colleges had two earning members in the families, whereas the comparable figure in the private colleges is 15 per cent. The differences between government and private colleges wear out as we move the comparison beyond 2 earning members in the family. Having more than one earning member in the family was found to be rather a rare occurrence as can be seen from the following findings.

Taking the total sample into account it will be noted from the table that 315 out of 727 (43.33 per cent) have reported having one or more earning members in their families. Among the reporting members, 80 per cent had only one earning member, 16 per cent 2 members, 2 per cent 3 members and 2 per cent more than 3 earning members in their families.

Number of earning members in the family or earning dependents ratio was also computed sex-wise. The average earning dependents ratio for male college teacher ($N=590$) is 0.35 and for the female college teachers ($N=137$) is 0.47. A t-test was conducted to determine the statistical significance of this difference. The obtained t-value³ 2.70 is statistically significant showing that female teachers have more earning members in their families than the male teachers. The female teachers have less dependency load on their shoulders. In the case of female teachers especially, it is possible that spouses of both sexes might be employed as earners in the family. This possibility partly explains the higher earning member ratio among female teachers of the sample (0.47) indicating a higher frequency of earning spouses or dependents in their family.

The detailed data on the earning member position for the male and female teachers is given separately in Table 2 below.

Table 2

NUMBER OF EARNING MEMBERS OTHER THAN THE RESPONDENT FOR THE TOTAL SAMPLE OF COLLEGE TEACHERS (N = 727) BY SEX X

Sl. No.	No. of Earning Members other than the respondent	Frequency and Percentage		
		Male teachers (N = 590)	Female teachers (N = 137)	Total (N = 727)
(a)	1 Earning Member	145(77.54%)	108(84.38%)	253(80.32%)
(b)	2 Earning Members	33(17.65%)	17(13.28%)	50(15.87%)
(c)	3 Earning Members	5(2.67%)	2(1.56%)	7(2.22%)
(d)	More than 3 Earning Members	4(2.14%)	1(0.78%)	5(1.59%)
		187	128	315

From this table it will be noted that out of a total of 590 male teachers in the sample 187 respondents reported at least one earning member in their family. Their percentage works out to 31.69. Similarly out of 137 female respondents in the entire sample 128 have reported at least one earning member. Their percentage comes to 93.43. Similarly out of the total reporting number of 315 respondents 187 or 59.37 per cent are female respondents. Taking 187 and 128 as the base figures for calculating the percentages, we find that 78 per cent of the male teachers and 84 per cent of the female teachers had one earning member in the family. Similarly 18 per cent of the male teachers and 13 per cent of the female teachers had two earning members in the family. The percentage figures for three earning members and more than three earning members in the table are small and therefore not commented upon.

Per capita Monthly Family Income: Teachers may get income from the inherited property, examinerships, examination invigilations, honoraria, private tuitions and books besides monthly income. The computation of the data as presented in Table 3 shows that 304 respondents (41.82%) are getting income from inherited family property, whereas 150 respondents (21 per cent) are getting income from examinations and 13 (2 per cent), 19 (3 per cent) and 15 (2 per cent) are getting some income respectively from honoraria, tuitions and from other sources.

Table 3
INCOME SOURCES OF COLLEGE TEACHERS (N=727)

<i>Sl. No.</i>	<i>Sources of Income</i>	<i>Frequency and Percentage</i>	<i>Range in Rupee value</i>	<i>Average Annual Income per Family</i>
(1)	Respondent's Income from/ Inherited Family Property	304(41.82%) ⁴	250—50,000	Rs. 18,286.96
(2)	Respondent's Earned Income			
	(a) Examinations	150(21.43%)	300—500	405.00
	(b) Honoraria	13(1.79%)	75—100	98.00
	(c) Private Tuitions	19(2.61%)	500—10,000	4,400.00
	(d) Others (books etc.)	15(2.06%)	500—8,000	1,800.50

It is found that for the entire sample the average per capita monthly income of the family is Rs. 454.55, whereas the average per capita monthly income of the government college teachers is Rs. 389.32 and that of the private college teachers is Rs. 480.35.

From these average figures of per capita monthly income one gains the impression that the private college teachers, on the whole, are economically better off than the government college teachers. In this connection it must be stated that our sample has excluded Demonstrators, Tutors and Junior Lecturers. It consisted exclusively of the Lecturers. No part-time Lecturer was also included. Keeping this sample frame in mind the disparity in income (approximately Rs. 90/- per capita) between the private college teachers and those of the government is quite significant. A 't' test was conducted to determine the statistical significance of this difference. The obtained 't' value⁵ 69.12 is statistically very significant showing that the private college teachers are better off than government college teachers.

Comparing the average per capita monthly incomes of the families of male and female teachers, it is observed that the average for the male teachers is lower (Rs. 421.73) than the average per capita family income for the female teachers (Rs. 595.94). The computed t-value⁶ 87.50 is statistically very significant. This income disparity owes to the fact that the spouse of a female teacher is also usually an employee. We have noted in Table 2 that more than 93 per cent of female teachers (i.e. 128 out of 137 females in the sample) reported having at least one earning member in the family. This earning member in most cases should be the spouse of the female teacher.

Level of Living Index:—As mentioned, this index, representing a consumption measure is only an indirect indicator of the economic position of teachers. The level of living index has also disclosed differences between teachers of government and private colleges. The average level of living index for the government college teachers was recorded at 10.85 whereas the average reported for the private college teachers was 11.34. The computed t-value⁷ for differences between the government and private college teachers is 4.12, which is statistically significant. The private college teachers scored higher on this dimension also.

The average value of the level of living index for entire sample is 11.20. Considering the possible range of level of living index, as a measure of economic status of the teachers, as varying from 3 to 21, an average index of 11.20 for the eaching community may not be considered a very high level. However, the private college teachers seem to be better off in this respect than the government college teachers. Considering the average value of the level of living index by sex, it has been noted that the female teachers had an edge ((11.51) over the male teachers (11.13). The t-value⁸ for differences between male and female teachers in level of living index is 1.8 which is significant statistically.

Household Possessions: As a specific indicator of the relative economic position of the teacher respondents a table was constructed from the data showing the household equipment and family vehicles etc. The data are as presented in Table 4.

Out of a total of 727 respondents 236 or 33 per cent reported possessing a grinder or mixer; 209 or 29 per cent possessed tape recorder or record player; 65 or 9 per cent possessed scooter or motor cycle; 14 or 2 per cent possessed fridge; and 12 or 2 per cent a cooler or air conditioner. In other words almost 1/3 of the respondents possessed a grinder or mixer and tape recorder or record player. It is also significant to note that not more than 9 per cent of the respondents reported possessing a scooter or a motor cycle. Still smaller percentage of respondents reported possession of air conditioner or fridge, etc. In general these expensive luxury possessions do not find favour with this sample.

In the last row of the table, we have combined several expensive household possessions viz., fridge, A.C. and a motor two-wheeler and it is found that only 8 respondents (1 per cent) of the sample possessed all these items together. The data indicate that on the whole the college teachers would not spend much beyond possessing at best a grinder/mixer and a tape recorder or a record player. Radio was not taken into account because it is the commonest household item. No preference was displayed by large majority of the respondents for possessing luxury items like scooter, motor cycle, fridge and A.C.

The household equipment data were broken up by college type and sex in Table 4. And from this break-up of the data, we find the following :—

- (1) Between sexes, female teachers (65 out of 137 or 47 per cent) reported possessing grinder or mixer more frequently than male respondents (171 out of 590 or 29 per cent).
- (2) Similarly for the other common household possessions, namely tape recorder or record player, we find again female teachers reporting more frequently (71 or 52 per cent) than male teachers (138 or 23 per cent).
- (3) As far as family vehicle is concerned the disparity again is greatest with 20 per cent of the female teachers and 6 per cent of male teachers reporting its possession.
- (4) Possession of grinder and mixer is reported by 204 or 39 per cent of the respondents of the private colleges, whereas only 32 or 16 per cent respondents belonging to government colleges reported the possession of a grinder or mixer.
- (5) A similar disparity between private and government college teachers is noted for tape recorder or record player. 170 (33 per cent) of the respondents of the private colleges and 39 (19 per cent) of the government college teachers have reported possession of tape recorder or record player.
- (6) 54 respondents (10 per cent) in the private colleges and 11 respondents (5 per cent) in the government colleges have reported possessing a scooter or a motor cycle.

On the whole, the data on the economic position of the college teachers show that the private college teachers and female teachers report a better economic position as measured by the various household items.

Caste and Economic Position: Table 5 given below presents the three measures of economic background (earning member ratio, per capita family income and the level of living index) corresponding to eleven selected caste groups in the sample. The computations and the tabulations were restricted to only 11 groups because the representation of other 16 caste groups in the sample is in negligible numbers. The 11 caste groups figuring in the table account for 623 out of 656 Hindu respondents in the sample. In percentage terms the 11 caste groups in the table cover 94.97 per cent of the Hindu respondents of the sample. For this reason there is justification to restrict the presentation of the results to only 11 of the 27 caste groups in the sample. In selecting the caste groups for this analysis it is felt that the group selected must consist of at least 10 cases for computing the three averages of the economic background of teachers.

Table 4
HOUSEHOLD POSSESSIONS BY COLLEGE TYPE AND SEX (N = 727)

Sl. No.	Particulars	Government college Teachers (N=206)*	Private college Teachers (N=521)	Total (N=727)	Male (N=590)	Female (N=137)	Total (N=727)
(1)	Grinder or Mixer	32(15.53%)	204(39.16%)	236(32.46%)	171(28.98%)	65(47.45%)	236
(2)	Tape Recorder or Record Player	39(18.93%)	170(32.63%)	209(28.75%)	138(23.39%)	71(51.82%)	209
(3)	Scooter or Motor Cycle	11(5.34%)	54(10.36%)	65(8.94%)	37(6.27%)	28(20.44%)	65
(4)	Fridge	3(1.46%)	11(2.11%)	14(1.93%)	12(2.03%)	2(1.46%)	14
(5)	Air Cooler or Air Conditioner	4(1.94%)	8(1.54%)	12(1.65%)	10(1.69%)	2(1.46%)	12
(6)	Fridge, Air Conditioner and Scooter or Motor Cycle	2(0.97%)	6(1.15%)	8(1.10%)	7(1.19%)	1(0.73%)	18

*The column totals do not add upto N of the column heads since all the respondents have not reported these household possessions.

Table 5

CASTE-WISE COMPUTATION OF EARNING MEMBER RATIO, PER CAPITA FAMILY INCOME AND LEVEL OF LIVING INDEX FOR COLLEGE TEACHERS (N=727)

Sl. No.	Name of the Caste	Earning Member Ratio		Per capita Family Income		Level of Living Index		(N)
		Averages	Rank	Averages	Rank	Averages	Rank	
1.	Brahmins	0.358	4	441.337	6	11.190	5	237
2.	Kammas	0.389	2	466.970	2	11.529	3	85
3.	Kapus	0.360	3	454.467	4	10.948	7	58
4.	Vaisyas	0.312	8	372.851	8	10.982	6	57
5.	Kshatriyas	0.310	9	366.506	9	11.556	2	45
6.	Reddys	0.342	6	511.129	1	10.732	9	41
7.	Scheduled Castes	0.436	1	455.878	3	10.588	10	34
8.	Velamas	0.346	5	442.708	5	11.750	1	24
9.	Telagas	0.301	10	363.178	10	10.895	8	19
10.	Patnaiks	0.338	7	417.058	7	11.462	4	13
11.	Devangulas	0.249	11	284.875	11	10.000	11	10
Sample Average		0.37		454.55		11.20		623

At the bottom of the table the overall sample averages were given for purpose of comparison. We may now present the details of the economic background of the teachers belonging to different caste groups in Table 5.

The whole-sample average of the earning member ratio of the teachers is 0.37. Taking this as the standard for comparison, we notice from the table that the following caste groups have scored higher than the standard ratio of 0.37: Scheduled Caste (N=34) = 0.436; and Kammas (N=85) = 0.389. All the other 9 caste groups have secured lower average ratios than the standard. It is quite interesting to note that the scheduled castes among the teachers have the highest ratio of earning members in the family followed by the Kammas. In column No. 4 in the Table ranks were given to each caste group depending upon the relative size of the earning member ratio. Looking at these ranks, we observe that, while the first and second ranks go respectively to Scheduled Castes and Kammas, the third rank goes to Kapus and the fourth rank to Brahmins and so on. The last of the ranks is claimed by Devangulas, who reported the lowest earning member ratio of 0.249. On the whole it may be said that the first three ranks on this income measure of the teachers are occupied by the Scheduled castes, the Kammas and the Kapus, who are able to supplement their family incomes through additional earning members more than the other caste groups.

Per capita Family Income: The whole sample average of the per capita family income in the sample is Rs. 454.55, which again is taken as the standard for comparison. The caste groups recording above this standard per capita family income are Reddys (N=41) = Rs. 511.129; Kammas (N=85) = Rs. 466.970 and Scheduled Castes (N=34) = Rs. 455.878. Kapus (N=58) have also recorded an average per capita family income of Rs. 454.467, which is closest to the sample average. The relative rank positions of the 11 caste groups on this second dimension of income are furnished in column 6 of Table 5. From this column, we

see that the first three ranks go respectively to Reddys, Kammas and Scheduled Castes. On the whole the four caste groups which are having relatively higher per capita family incomes are Reddys, Kammas, Scheduled castes and Kapus. The Brahmins take the fourth rank for the earning member ratio and their rank for per capita family income is the sixth.

Level of Living Index: The total-sample average of the level of living index is 11.20, which is the standard for comparison. Scoring above this standard are the caste groups: Velamas (N=24)=11.750; Kshatriyas (N=45)=11.556; Kammas (N=85)=11.529 and Patnaiks (N=13)=11.462. The Brahmins again take 5th rank for level of living index (See column 8 in Table 5).

Rank Order Correlation of the three economic measures: In order to determine whether a given caste group is consistently ranking high on all the three economic dimensions Spearman's rank order correlations were computed and the results are as given below:

Rank Order correlation between:

- (a) Earning Member Ratio and Per capita Income — 0.725 (Significant at the 5% level).
- (b) Earning Member Ratio and Level of Living Index = - 0.517 (Not significant)
- (c) Per capita Income and Level of Living : -0.567 (Not significant)

The results show that the two income measures are quite correlated and yield consistent ordinal positions for the different caste groups on these two economic dimensions. However, the consumption measure of level of living is negatively correlated with both the income measures, although the relationship is not strong statistically. There is thus an indication that income and level of living might possibly be independent. High income teachers need not necessarily strive for a higher level of living. They may save more and spend less, or they do not rate themselves as attempting to attain a high level of living.

Conclusions

Considering the fact that the sample for this study consisted of fifty per cent of the government and private colleges affiliated to Andhra University and fifty per cent of the teaching staff drawn from every department in each of the selected colleges, thus constituting one-fourth of all the teachers employed in the affiliated colleges of Andhra University, the findings of this study may be considered fairly reliable and representative.

A very striking and salient finding of the study is that notable variations in economic position exist among college teachers taken as a single community, and these variations correspond with college management, sex and caste background. The college teaching community is a heterogeneous community in terms of its caste and sex composition and economic position. The differentiation of the colleges into government and private colleges is a significant source of variation. Somehow it happens that private college teachers are economically better off than government colleges, when economic well-being was measured in terms of the ratio of earning dependents and per capita family income. This difference owes to the possibility that the educated and economically better off sections of the community enter into private college appointments more frequently and more easily than into government colleges.

When a comparison is made between sexes, the study shows that the economic position of female teachers is higher than that of male teachers, and this result is attributed to the high proportion of additional earning members in the families of the lady teachers, especially their spouses.

As far as caste is concerned, although the Brahmin caste is numerically the single largest group of the college lecturers, it occupies the 4th or 6th rank in economic position. A consistently high economic position is disclosed in the data for Kammas, Scheduled Castes, Reddys and Kapus.

It is an interesting result of the study that those of the scheduled castes who entered the teaching profession have stood higher on the economic ladder than several of forward castes such as Brahmins, Vaisyas, and Kshatriyas, etc.

Lastly, it may be concluded that the college teaching community displays no inclination for extravagance in terms of expensive or luxurious household possessions such as air-conditioners and refrigerators, etc.

V.V. Ramana and C.R. Prasad Rao

1. See: Ph.D. Thesis of Sri V.V. Ramana, "Socio-Economic Background, Communication and Alienation Among College Teachers" (Guide: Dr. C.R. Prasad Rao) in the process of submission to Andhra University for adjudication.
2. The standard deviations for government ($N=206$) and private college teachers ($N=521$) are 0.176 and 0.233.
3. The Standard Deviations are 0.214 and 0.236 for male and female teachers respectively.
4. The 304 respondents have inherited family property whose rupee value ranges from Rs. 800 to 8,00,000 with an average of Rs. 72,176.15.
5. The Standard Deviations for government and private college teachers' per capita monthly incomes are Rs. 216.68 and Rs. 355.36.
6. The Standard Deviations for male and female teachers of the per capita monthly income are Rs. 265.80 and Rs. 481.47.
7. The Standard Deviations for government and private college teachers for the level of living index are 2.12 and 1.96.
8. The Standard Deviations for male and female teachers for level of living index are 1.96 and 2.28.

Communications

MERIT LIST ON THE BASIS OF Z-SCORES IS NOT VALID

V. Natarajan has written on "Equating Marks from different Boards" in Autumn 1982 issue of *Journal of Higher Education*, published in June 1983. In the concluding part he has illustrated how marks from two Boards X and Y can be compared in terms of z-scores i.e. in terms of σ -distances from the Mean. He has worked out in terms of the average of z-scores for the preceding three years. For instance it is said that a student in Board X securing 90% marks has a z-score of 4.990 and in Board Y a student with the *same* percentage corresponds to a z-score of 3.992; therefore the first rank student of Board X is not equivalent to the first rank student of Board Y. A raw score of 80 per cent in Board X with z-score 3.786 is approximately equal to a raw score of 90% (z-score 3.592) of Board Y. The Board X is thus stricter. On the contrary one can argue the other way round. The Board X found the group to be inferior and decided to be lenient. Even then it might happen that the Mean score of X was less than that of Y. Consequently, z-score of X for higher percentages is higher than that of Board Y.

Examining the hypothetical table of Board X marks for three years, 80% marks of 1980 or 1978 (z-score 4.250, 4.000) approximately correspond to 90% of 1979 (z-score 4.222). Is 90% of 1979 to be considered of lower calibre compared to that of 1978 or 1980? On the contrary, 1979 may be a better group, it has a superior Mean score and therefore higher percentages show lower z-scores. *Or*, the paper set may be easier; this can be judged by a knowledgeable person by comparing the questions set and not by statistics. In any case, since 1979 marks differ so much from those of 1980 or 1978, one is *not justified in including them for taking the average*.

Comparing z-scores and Means of a group may lead to some reasonable inferences about the quality or distribution of the *group as a whole* but *not* about *individuals*.

Ranking of students of different Boards or preparing their merit list on the basis of z-scores for any purpose will *not* be generally justified, will *not* be *valid, cogent or sound*.

Consider for example 1983 S.S.C. Board Examination (Pune) results of two schools *from the same Board*. By so doing we are eliminating the effect of variations of exam. questions. In the whole Board 3.63 lakhs of students appeared, 107 scored more than 90% in the aggregate with a percentile of 99.986. Assuming the Mean score of 45% (percentage of successful candidates 52.76%) with say $\sigma=16$, 90% would mean z-score of 2.8. School A with 486 students (result 97.3%, highest 93%, Mean 68%, $S(\approx\sigma)=16$

had 13 students scoring more than 90%, a z-score of 1.4. School B with 111 students (result 78%, highest 88.7%, Mean 54%, σ = 17) would give a z-score of 2.1 for 90%. We thus arrive at a z-score of 2.8, 1.4, 2.1 for the same 90% marks in the same examination. *Is this justified? Is it valid?* Schools of a district often have a common annual examination papers and answer scripts are assessed by the staff of individual schools. In such a case should a school select students who wish to migrate on the basis of z-scores? The z-score is certainly biased by a particular group. It belongs to that group. Conclusions drawn from such statistics are inapplicable.

The fallacy lies in the fact that the zero z-score is considered as the same quality for every group, from Board to Board.

This will be clear from the following table:

1983	Group No. of candi- dates	Success- ful can- didates	Mean Score %	S.D.	Z-score	90 to Corresp. percentile	
School A-Pune Board	486	97.3	68	16	1.4	97.76	1.4 σ (B) = 78
School B-Pune Board	111	78.0	54	17	2.1	99.09	2.1 σ (C) = 71
School C-Pune Board	73	31.5	37	16	3.3	98.7	
Pune Board	3,63,000 (rounded)	52.76	45 (say)	16 (say)	2.8	99.985	2.8 σ AU = 85
Aurangabad Board	65,000 (rounded)	38.43	40	16	3.1	99.992	may be

(Natarajan's argument would lead us to the conclusion that Aurangabad Board was stricter than Pune Board, 85% of it corresponds to 90% of Pune; also the result of Aurangabad Board is less than that of Pune. However, the facts do not support this kind of thinking).

The frequency distribution (No. of students/10 marks range) of 486 students of school A would rather disappoint educational experts. The figures are as follows:

Range	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100	Total stu- dent
School A :	---	4	10	46	92	91	106	120	17	486
School B :	1	7	19	24	16	24	13	7	---	111
School C :	5	26	20	7	7	4	2	2	---	73

For school A the frequency is fairly constant, rising slowly from 50% onwards right upto 90% and would be considered as a reflection on the questions set. But consider the case of school B; one would be happy to notice the bell-shape symmetric distribution

emerging though not strictly Gaussian. The expert would then consider the same questions satisfactory. The distribution of school C is skewed with mode at 28%.

The questions are to be judged rather by their 'content' validity than by performance of the candidates. It depends on the 'judgement' of an expert-teacher-examiner which is to be exercised at the time of setting and not after observing the performance. "School children, college sophomores—such casual groups rarely constitute random samples of any defined population. S E formulas apply with a high degree of approximation, if at all. And generalisations based on such data are often misleading."

The z-score for a given percentage at the same examination depends on the group. From the table it will appear that

78 % of school B	corresponds to	90 % of school A
71 % of school C	-Do-	90 % of school B, 101 % of school A!

The enormity of injustice, the effect of *forcing normality* on the distribution and considering all zero z-scores equivalent will be apparent if T-scores ($M=50$, $\sigma=10$) are calculated. If -1σ or $T=40$ is taken as the pass barrier (which again arbitrariness prescribes that 15=16% of a sample always fail for all exams for all the time) the pass marks for the schools A,B,C, Pune Board, Aurangabad Board would be 52, 37, 21, 29, 24 per cent. This procedure allows systematically to pass off mediocrity as scholarship. Unprogressive, stagnant-in-achievement candidates are boosted and considered adequate. This is devaluation of merit.

"With several Boards operating in different regions of the country, or examining students who have attended various schools or colleges—some better than others, then the z-scores can't be compared" as one authority would state. What then we are left with is the *percentage* of marks which is an adequate measure of an individual student's ability *independent* of any group in which he happens to fall for the same examination. For different Boards, the value of a percentage can be judged by a knowledgeable person by comparing the question papers. Anomalies, if there be any on account of evaluation methods, processing results, negligent examiners etc., *cannot* be compensated by any statistical procedure. The remedy lies in the basic reform of setting quality questions (content validity) and training teachers in reliable reading of answers. One is justified in relying on and ranking students on the basis of percentage marks than on the percentile or z-scores.

R.D. Godbole

VOCATIONALIZATION OF COMMERCE EDUCATION AND THE ROLE OF UNIVERSITY

The role of Commerce Education in the modern age of industrial development with sophisticated business operations can hardly be minimised. Commerce education has to play a vital role in the management of industries, trade and commerce, transportation, insurance offices and government departments. Commerce education aims at preparing personnel of various types for the different layers of management of business and government offices. It prepares personnel for a wide spectrum of job opportunities available in the world of business and industries. In the new pattern of school education, commerce has been introduced both as vocational and academic courses at the higher secondary stage, i.e. at +2 stage. Thus commerce education at the higher secondary level has to play a dual role; one for preparing students for University education and the another for producing personnel for initial-level of employment in government offices and business and industry. The vocational courses in commerce will be normally terminal courses for those who do not have the requisite aptitude or the means to pursue further study at the university level.

These courses are expected to prepare typists, stenographers, book-keepers, despatchers, salesmen, receptionists and so on. Vocational courses in commerce education are distinct from the technology or agriculture courses in regard to job resource requirements, nature of employment opportunities and personal development of the products of the course. The scope for self-employment, except in few cases is negligible, whereas in case of technology and agriculture, given the necessary facilities, the scope for self-employment is wide. While developing any programme of vocational courses in commerce education, it is essential to consider the various interrelated factors.

General Education in Vocational Courses

A very important question for consideration while developing the curriculum of vocational courses in commerce education is that what should be the place of general education in its curriculum planning. The place of general education has to be decided in the light of job requirements and nature of commerce courses. Commerce is both vocational and liberal education. The dose of liberal and vocational education as part of total curriculum planning will vary from stage to stage. The main aim of the vocational courses is to turn out the initial level personnel for government and business houses. Naturally, these initial level office workers should have a broad based general education to function as efficient office workers.

A good general education is a spring board for vocational courses in Commerce Education. General education aims at the liberalisation of outlook, transformation of social values and attitude for better human relations in a growing society. As a matter of fact, general education enriches the power of reasoning, understanding and comprehension which are essential for functioning in the offices. General education helps in the learning of skills and developing competencies. Hence, in any curriculum planning for vocational courses, general education must find its due place. A good general education will help the students to develop and diversify his personality in the growing economic matrix of modern days.

The general schooling that is being conceived of will provide a broad base of general education to students going for vocational courses. At the same time, there should be adequate provision for further general education in the form of language teaching and social studies.

Education in a society unleashes expectations, ambitions and energies which should be given free play to avoid any frustration. The demonstration effect of the offices works on the young entrants causing frustration in the long run when future prospect is blocked. General education will provide an adequate opportunity for any change in the nature of work. Indian economy is a growing economy. Our curriculum in vocational courses must be planned keeping in view the prospective needs of our growing economy. The opportunities for job go on changing. The problem of structural unemployment is a characteristic of growing economy. The nature of jobs also undergoes a great deal of change with the passage of time. A person with good grounding in general education can adjust himself to the needs of growing economy for better prospects in life.

Main Objectives for Vocational Courses in Commerce Education :

A major task of education for vocational courses in commerce education will be the preparation for work in business and government houses for initial level employment. It seems realistic to assume that the role of vocational courses in commerce for preparing students for work will be defined as follows:

- (a) To help students refine partially developed skills in reading, writing, spelling, speaking and computing;
- (b) To help young students develop sufficiently mastery of one or more specific job skills that will enable them to make entry into initial employment;

- (c) To help students develop work habits that are necessary for sustained quality performance that are being required in an increasingly greater degree in all areas of business and industry;
- (d) To help students develop the personal qualities that are essential for adaptability for working with highly complex machinery and for successful human relation involving the employer and fellow employees;
- (e) To help students know the career opportunities that are available to them and initiate them to the educational and practical experience requirements for success in these occupations.

Problem Solving and Logical Thinking

A recognized outcome of all education is the development of problem solving and logical skills. Vocational courses in commerce education can assume a major role in achieving this outcome at the higher secondary level. The vocational courses in commerce education should provide ample opportunities for problem solving.

Personal Development

Since education must be concerned with helping students develop to the fullest extent physically, emotionally, socially and economically, vocational courses must assume a responsibility for achieving the outcome in this area. Certain office utility skills, such as typewriting, accountancy, office practice and stenography comprise part of the personal development of our students of vocational courses.

Basic Skills

The development and refinement of basic fundamental processes is the responsibility of education at all levels. Commerce education must assume its rightful share, especially in refinement of partially developed processes. Every commerce teacher should feel obliged to help students acquire higher degree of skills in writing, spelling, reading, computing, and speaking.

Training in Citizenship

Commerce courses can provide ample opportunities for training in citizenship. Training in punctuality, regularity, office etiquettes, neatness and cleanliness, students respect for the class equipment and furniture can be given in the vocational classes.

Guidelines for Curriculum in Vocational Courses in Commerce Education

The vocational courses in commerce education at plus two level have to be framed and developed keeping in view the present employment opportunities in our country. These vocational courses have to be so designed as to develop necessary job competencies for immediate employment in the government offices, business houses, banks, insurance etc. At the same time we have also to keep in view the career building aspiration for those products who will join these courses simply on account of economic hardship. In future, the products of the course might like to go in for degree courses.

Vocational courses in commerce are slightly different from the vocational courses in Technology and Agriculture. Whereas the products of Technology and Agriculture courses can go in for self employment also, the products of vocational course in commerce have to depend entirely on the job opportunities available in the local and regional markets. The products of vocational courses in commerce can get such jobs as typists, stenographers, despatchers, store-clerks, receptionists, enquiry clerks and so on and so

forth. These are the initial jobs for employment of the products. As these products have to function effectively in the offices either of the government or business, it is essential that there should be desired proficiency in the language of work. Language is a powerful vehicle to improve the efficiency of work in the offices and tuneup human relations. The state Governments have been gradually adopting the regional languages as media of instruction. The administration of the state governments is carried on partly in the state languages and partly in English. We have to keep in view the language problem while framing the syllabi of vocational courses at the higher secondary level. The work of business houses in our country is still being carried on in English, and naturally the knowledge of English is also essential for the products of the course.

At the present state of our economy, we can never think of a very narrow specialisation at this level. The curriculum should be so designed as to enable the products to get suitable jobs in their locality or region, either in the government or business houses. For this, it seems desirable that some subjects should be made compulsory and some optional. This will enable the products to fit themselves in the different office situation and will also enable them to pursue higher studies if so desired and if circumstances permit them at a later stage of their life.

A curriculum is the offerings and programmes of the school and encompasses more than immediate class room objectives. Co-curricular activities such as work experience, job analysis, follow-up studies and so forth are equally important in any curriculum pattern. The schools must provide adequate facilities for co-curricular activities to the students of vocational courses in Commerce education. Some of the activities are the organisation of Commerce museum, Commerce clubs, banking and insurance offices and cooperative stores in order to provide practical experience to the students. This will also help the students to develop the quality of entrepreneurship for self employment. A school can also organise an association for typists and stenographers of the locality requesting the experienced members of the profession to help the students develop the necessary competencies. Environment is a very important factor for the development of any good educational programme. This is all the more important for the vocational courses in commerce education; because, for the first time, the country, as a whole, has been planning to diversify the courses with clear objectives and goals. Proper environment and creative leadership in developing and enriching the programme should be aimed at by the school.

Typewriting and shorthand require continuous practice in order to maintain a certain level of proficiency till the absorption of the products in any office. In order to provide a continuous practice, the schools should make provision for the products who have passed the annual examination conducted by the higher secondary board but are still unemployed. In fact, this should be a very important inservice activity for the schools in our situation.

The Vocational education curriculum in the area of commerce education is a special area of instructions, which will deal with the business skills and techniques, business knowledge and facts, business understandings, business attitude, business appreciation, business ideas, necessary to understand and adjust to the needs of the offices of the various types. With this end in view, the core subjects are suggested. This is based on the belief that all students going in for specialisation have a common need for the certain types of learning called, "cores".

It has always to be kept in mind that students should be taught for the purpose of gaining experiences with the concept in the field rather than for the purpose of fitting the students into a specific job. The students so educated will be superior in adoption to change in the job to the person who have learnt ad hoc techniques and practices. Moreover, we are not fitting the students to a job, but trying to help them to realise their rational potential as human beings. We expect the job to be an instrument to a further growth rather than an end in itself. The stenographer who has been taught how to take dictation for only one kind of business, can change with greater difficulty from one business to another than the Stenographer who has a broad general shorthand vocabulary.

The language problem has been pointed out earlier. A good student of commerce for functioning effectively and efficiently in any office must have good grounding in the language or work. In our situation, proficiency in two languages is inevitable. The need for basic understanding of the commercial arithmetic for office jobs can never be under-rated. Therefore, commercial arithmetic has to be prescribed as an important subject of the curricula. Office practice is a general course for all students. It covers procedure, human relationship, which office workers are expected to know. It ties together and integrates on vocational level, the knowledge and skills gained in the course and introduces certain new related subject matter which will make a student a competent and more highly informed office worker.

Typewriting as a core subject provides flexibility in job selection. Typewriting is a tool of efficiency in our modern offices. With a view to making the student aware of the basic principles of our economic and social policy for realisation of a democratic, socialistic and secular society, it is essential that students know in detail about the various measures taken by the state towards that goal. So a paper on Economic and social policy of the state has been included for general education.

The vocational courses in commerce education must be built in the whole structure of commerce education, otherwise any effort to introduce vocational courses in commerce education will fail to materialise. Before we embark upon the vocationalisation of courses at the higher secondary level, we must think of creating an adequate infra-structure for its development and growth. These infra-structures are knowledgeable and competent teachers, and teacher educators and good instructional literatures, readiness of the community to accept the reality and encouragement from the state and business community.

Need for a New Discipline

A very pertinent question which should draw the attention of the educationists and leaders in commerce education is the reshaping of the curriculum of graduate and post graduate courses in commerce discipline. The idea of vocational courses in commerce education at the higher secondary stage can be implemented when these subjects find a place in the curriculum of our degree and post graduate courses. These courses have to be re-organised and restructured so as to include vocational courses, only then can the product of these courses can be fully equipped with transferable skills and competencies to teach the vocational and non-vocational subjects at the higher secondary stage. In its 36th report the Central Board of Education has already emphasized that old disciplines may be given up and new disciplines be developed to meet the needs of modern India. This is an axiom for the commerce discipline. There should be two discipline, one 'Master of Business Management' and the other 'Master of Commerce Education'. The Master of Commerce Education discipline should be so designed as to turn out good teachers for all levels and middle level office workers and managers.

A very important controversial matter regarding commerce education is the nature and character of commerce education. Commerce education has been accepted by the Board of Technical Education, Ministry of Education, Government of India, as a technical discipline. Another view held patronisingly by the academicians is that it is liberal education. Management education is a liberal education with broad spectrum touching our entire economic and social life. Management is both a science and an art. Management as a science plans and harness the resources of the organisation for the maximisation of efficiency and output. Management is an art of the application of the various principles based on behavioural sciences. Management encompasses in its discipline something of every other branch of knowledge ranging from science and Mathematics to Economics, History, Sociology, Anthropology, Forecasting, Engineering and what not. Management is a liberal education. However, there should not be any two opinions about the commerce education. Commerce education should be vocational education, aiming in all aspects at the preparation of office

workers at the initial and middle levels of organisations. We have also in our country other professional organisations such as the Institute of Chartered Accountancy, Cost Accountancy, Management Accountancy, Company Law. These bodies prepare professional experts in their respective areas. Entrance to these bodies is open to any graduate, irrespective of his discipline.

Development of Discipline in Relation to Economic Growth

Educational disciplines are the outgrowth of the economic, social and political forces interacting on each other. Educational disciplines are developed and strengthened to meet the increasing needs of a dynamic society on the threshold of economic growth. With the maturation of economic, social and political life, the disciplines also do get matured requiring a little variation. In the process of economic growth, the quality of the people goes on changing through the instrumentality of education. This change has also to be brought about gradually keeping in view the long range view of the requirement of the community. The problem of vocationalisation of education is bristled with many difficulties. A foresighted view of the development of a new discipline has to be taken. The time has come for the country to think over this aspect. Opportunity once missed is missed for ever. Even the Kothari Commission has recognised the need for restructuring of the post graduate courses to implement the idea of vocational courses. This is very appropriate for vocational courses in commerce education. Commerce courses at the graduate and post graduate levels must incorporate in their curriculum vocational subjects, and the whole approach of the curriculum should be functional and practical. The present B.Com. and M.Com. courses are dysfunctional. There should be over all changes in the selection, combination and integration of subjects. It is good that many Universities in India, at least 32, have introduced Masters' course in Management.

Co-ordinated Planning Needed

We can never think of planned education in our country, on the lines of Soviet Russia and East European countries. Ours is a democratic society with a federal constitution. Our universities are autonomous bodies. However, the universities of India have to fall in line with the national policy. They have the responsibility to help the Government in implementing the national policy. They are the producers of the required personnel who are expected to provide leadership in our national life. Education is a state subject. It is the responsibility of the states to persuade the universities to develop new courses. Vocational courses in the comprehensive schools of the U.S.A. could start getting the impetus only after the financial assistance was given by the Federal Government. The Union Government of India has to provide adequate financial assistance for the starting of vocational courses at the higher secondary stage and for the development of a new discipline of commerce education in the universities which are to be purveyors of suitable teachers for vocational courses.

Universities of India can not function in an isolated manner. They have to join the mainstream of educational policy and provide the enlightened leadership by developing new discipline of Commerce Education. In fact, the Universities of India have not been involved in the process of educational planning. There is a need for serious and meaningful dialogue, between academicians of commerce discipline, planners and administrators. There is an urgent need for a breakthrough in the curriculum construction of commerce disciplines. The curriculum of commerce education should be so designed as to include vocational subjects of commerce and pedagogy to enable the products to teach both vocational and college preparatory subjects of commerce at the higher secondary stage.

There is a need for coordinated and planned development with commitment to the national policy by all the layers of decision making. It should suffice to say here that no scheme can be implemented on all an India basis at one stroke. Each state can develop this

discipline in the selected colleges of the selected universities and sufficient incentive should be given to students seeking admission to this course in terms of scholarships and guarantee of services in schools. Human mind is surging with the continuous flow of ideas but the strength and will of the country lies in the concretisation of those ideas. A good deal of thinking, planning and strategy for the implementation has to be done. Education is a man-power industry producing the skills necessary to a modern community.

Education is an investment :—investment in men and materials to give the beneficial result in decades.

Deprofessionalisation of Teaching

The idea of the implementation of vocationalisation of education is bogged down in the quagmire of elusion. It is well nigh impossible for a decentralised society of our to fall in line with this national policy unless a planned and anticipated advanced action for the preparation of right personnel is taken in a coordinated way by all the agencies. In the absence of the right personnel the whole idea of vocationalisation will be a nightmare for all of us in this world of ours. This is as true in case of commerce as in other vocational subjects. The present thinking of deprofessionalising the teaching profession with a view to implementing the idea of vocational courses is rought with dangerous consequences resulting in failure of the whole scheme. The teaching profession can never be deprofessionalised in our economic-socio milieu when there is a serious dearth of right personnel. The two aspects of any education, training and culture and skill development can never be expected to be achieved from persons lacking devotion, loyalty, mastery of the subject and pedagogical training. The students must enjoy the confidence of the teacher. The teachers must get the respects from the students. The society must feel that the idea of vocationalisation is being implemented with the necessary seriousness. The deprofessionalised teacher must feel that he is professionally and socially responsible. Can we visualise the availability of such deprofessionalised teachers in our country? Are we not looking in the dark room for the black Cat that is not there? Are we not showing lack of understanding of the real problem? It is time for all of us to think and plan an appropriate approach.

Experiences From the Past

There was a time when our country wanted to implement the basic education system proposed by the Father of the Nation. We are fully aware of the causes of its failure. One of the important causes of the failure is that no system of philosophy of education can be implemented in the isolated manner. It must be engraved in the built-up structure of the educational fabrics of the country. Secondly, no step was taken to prepare good teachers with the dynamic thinking. Everything was attempted in a slovenly manner without any conviction backed with reason. Fifties was the decade for the development of multipurpose schemes. The idea was a landable one. But poor planning led to its bitter failure so much so that it became a laugh of the decade in our educational system. We have to learn from our experiences. Let us not wait for the same Waterloo. In the interest of clear thinking it is better to give up the apologetic view of vocationalisation of education and show the much needed maturity of facing the brass tacks. The foundation for the development of vocational courses and discipline that we shall have in this and the next decades will start giving return in the beginning of the next century, when the nature of our economy is expected to be multicultural as a whole.

U.S. Prasad

COMMERCE CURRICULUM IN INDIA: NEED FOR REFORMS

There has been much talk about the imperative need for restructuring and reforming commerce education at seminars and conferences organised in the country during the last one

decade. Enrolment in commerce courses has grown phenomenally in recent years along with the enrolment in higher education. But it is pathetic to note that commerce education in India has not been developed with an image of being job-oriented one both at the graduate and postgraduate levels. It is emerged as a general qualification along with other courses of education. Neither the syllabi which was framed two and half decades ago nor the pedagogy have changed to the present dynamic conditions. Consequently, we can observe, deteriorating standards and mounting unemployment of commerce graduates in recent years. In view of this, there is a need for introducing and incorporating some reforms in commerce curriculum in such a way that it would sub-serve the national objectives, need and interest.

Commerce education should serve as the means to prepare for specific types of employment. The criticism generally levied against commerce graduates is not providing enough training, practical application and the skill of analytical ability and problem-solving. The evolution of professional courses like C.A., I.C.W.A., A.C.S., etc., has elevated the commerce education imparted by all universities through out the country to a lower status. So, it is high time that an attempt should be made to link commerce education with management education. Further, there should be some sort of integration and rapport between the universities and the professional institutions through some appropriate institutional arrangement at the national level. As far as possible, they should aim at either evolving common and uniform syllabi in different subjects or provide for mutual exemptions, on selective basis in some papers. Along with the changes in the syllabi, reforms should also be made in regard to teaching methods. It is time to rescue commerce education from its bookish and purely verbal content through emphasis on teaching techniques which involve visual and practical situations. To facilitate this, text-books and class room lectures should be supplemented with case literature and practical training in industrial courses which will go a long way in narrowing the gap between principles and practice. Periodical guest lectures by eminent professionals from industry and institute should be arranged to expose the students to practical issues and problems in the business and industry. There should also be regular exchange of university teachers and managerial elite on reciprocal basis to the mutual benefit.

In fact, commerce education in the universities has not yet developed to such an extent as its counterparts, viz., Arts, Science and Engineering. For instance, in the Faculty of Arts, there are separate branches such as, Economics, Sociology, History, Education, Industrial Relations, Anthropology, etc. Similarly, separate courses are offered for Physics, Chemistry, Zoology, Botany, etc., in Science faculty. Even in Engineering also, there are different courses like Civil, Mechanical, Electrical, etc. Thus, the Arts, Science and Engineering students have an opportunity to gain proficiency and in-depth knowledge in the concerned branch. Only peripheral knowledge is imparted at the postgraduate level in each commerce subject. To obviate this, a similar strategy for commerce subjects too should be envisaged and implemented on similar lines both at the college level and university level by planning the areas of specialisation such as Finance, Taxation, Accountancy, Transport, Banking, Co-operation, Marketing, Trade, etc., so that the knowledge gained by the commerce graduates at the masters degree level would have greater potential and relevance for practical utility. It would be better, if separate commerce colleges are established for imparting commerce education. The same has also been emphasised by Professor K.V. Sivayya, the then Chairman, Faculty of Commerce and Management Studies, and a Member, Executive Council of the Institute of Cost and Works Accountants of India, a few years ago in his presidential address at XXIX All-India Commerce Conference held at Banaras Hindu University, Varanasi. It is true that many job-oriented subjects are taught to commerce students both at graduate and postgraduate levels for which there is already great demand throughout the country. But, unfortunately, due to lack of sufficient background in commerce, these students are not able to specialise in any of these job-oriented courses.

Finally, it is evident that the teacher-student ratio is the highest in commerce, especially in affiliated colleges, where it is about 60 to 100. Thus, there is every need to bring down

this alarming teacher-student ratio in commerce. Moreover, while attempting to reform the commerce education, due regard should be given to teacher training programmes. The teacher should be equipped with sufficient theoretical and business background to get perfection in the subject to enlighten the students in accordance with the national objectives. For this, the commerce teachers should be encouraged to participate in various conferences at national and international level. Further, research facilities should also be provided to the commerce teachers and students.

On the basis of the views mentioned above, it is concluded that reforming commerce curriculum would go a long way both in making the discipline more relevant to the rapidly changing society and in orienting more vocational and pragmatic to meet the needs and desires of a growing business community and the country.

R. Satya Raju

PREPARING FUTURE EDUCATIONAL LEADERS TO WRITE FOR SCHOLARLY PUBLICATION

Basics of Academic Publishing is far more than a course *about* scholarly writing and publishing. The course is of the "how-to" sort, and students who enroll are required to write and actually submit materials to journals for publication consideration.

Early in the course students are introduced to library resources which describe in detail more than 62,000 periodicals related to their fields and scores of others. The objective is to acquaint those in the course with the literally hundreds of publishing options available to them. Most students in the course are pleasantly surprised and delighted to discover the almost unbelievable number of periodicals in their fields. They begin to see that their future publishing opportunities are by no means limited to the small number of journals with which they are already somewhat familiar. This part of the course is itself a virtual revelation for most.

Students are next shown how to research journals in their fields. Which journals are referred and which are not? Which journals publish unsolicited materials and which do not? What style do particular journals require? MLA, APA, etc. These questions merely illustrate the sorts of information students seek as they research periodicals in their respective fields. The point made of the exercise is that it is foolish to pursue the publication of materials without knowing what one's options are and what are the interests and specifications of specific journals.

Basics of Academic Publishing is a lecture and laboratory course. The professor does lecture on the ins and outs of scholarly writing and publishing. But all students are required during the course to prepare two book reviews and one fully developed journal article. The laboratory part of the course consists of time during which the professor works with each student individually on whatever writing problems the student may have. The professor personally edits each student's work and carefully checks to insure that the student's final product conforms to the specifications of the periodical to which the material will be submitted. Finally, students do in fact submit all materials written to journals of their choice. What follows are the results of a recent survey of a sample of students who have completed the course. The survey sought answers to a number of questions, not the least of which was this one: Are those who complete the course successful at learning to "break into scholarly print?"

Method

Basics of Academic Publishing has been offered almost every semester since the fall of 1979. The names and addresses of those who have taken the course remain on file with the course professor.

The professor recently developed a one-page questionnaire which was mailed to each student in the sample selected. The purpose of the survey was to determine the effectiveness

of the course. The sample surveyed consisted of fifty-two former doctoral students who returned completed questionnaires.

Results

What motivates those who have never had their literary works published to enroll in a course dealing with scholarly writing and publishing? In Table 1 are typical and illustrative reasons given by those who have completed Basics of Academic Publishing. All students

Table 1

PARTICIPANT RESPONSES TO THE QUESTION: WHY DID YOU ENROLL IN BASICS OF ACADEMIC PUBLISHING?

- "To learn more about preparing material for publication"
- "To avoid perishing"
- "To gain knowledge and skills to enhance my publishing track record"
- "To sharpen writing skills and to learn about publishing"
- "Because of the need to publish in my profession"
- "It (publishing) improves one's academic record"
- "I wanted to publish but didn't know how to take the first step"

appear to be career-minded individuals who simply wanted to learn how to have their writings accepted for publication in scholarly journals. It is also noteworthy that many of the students who took the course perceived publication as a means leading to tenure, promotions, and merit salary increases within their fields.

The ultimate test of the effectiveness of a course dealing with scholarly publishing is the ability of students to actually "break into print". In Table 2 are data illustrating the post-course publishing success rates of students who have completed the course.

Table 2

POST-COURSE PUBLISHING SUCCESS OF FORMER STUDENTS

Question : Since taking Basics of Academic Publishing, have you had anything accepted for publication ?	Yes		No	
	N	Per cent	N	Per cent
	45	86.5	7	13.5

Although the success rate for those who took the course was 86.5%, this figure may be misleading. Whereas all students did in fact submit materials to journals, the *eventual* success rate can only increase. Many students who participated in the survey reported in this article indicated that they were still awaiting notices from journals regarding the disposition of materials submitted for consideration. It is, therefore, conceivable, if not likely, that some students have had materials accepted for publication since the time of the survey. If this is the case, the reported success rate of 86.5% is a conservative, but accelerating, estimate.

Students who participated in the survey were asked what sorts of materials they have had accepted for publication since taking the course. Table 3 contains information describing both the nature and number of their publications.

Table 3**TYPES AND NUMBERS OF MATERIALS ACCEPTED FOR PUBLICATION**

<i>Category</i>	<i>Number</i>	<i>Per cent</i>
Book review	58	60.2
Articles	42	37.1
Dissertations	2	1.8
Books	1	0.9
<i>Total</i>	113	100.0

It is not surprising that the majority of student publications (60.2%) have been book reviews. Students in Basics of Academic Publishing are taught that writing book reviews for publication is the best single way to "break into scholarly print". What is somewhat surprising, and particularly encouraging, is that more than one-third (37.1%) of the students have had fully developed articles published in scholarly journals.

Just as the ultimate test of the effectiveness of a course about scholarly publishing is the ability of students to have their materials published, the test of what students think and feel about the course is whether they recommend it to others. Do those who have taken Basics of Academic Publishing recommend the course to others? In Table 4 are student responses to this question.

Table 4**PARTICIPANT RESPONSES TO THE QUESTION: DO YOU RECOMMEND BASICS OF ACADEMIC PUBLISHING TO OTHERS?**

<i>Response category</i>	<i>Number</i>	<i>Per cent</i>
Yes	51	98.1
No	1	1.9
<i>Total</i>	52	100.0

When one considers that it is difficult, if not impossible, to please everyone, it is not surprising to observe that one student (1.9%) out of fifty-two does not recommend Basics of Academic Publishing to others. That 98.1% do recommend the course indicates, not only that those who took the course benefitted from it, but also that they believe others who enroll in the future will likewise benefit.

Conclusions

There is no reason to believe that the need for professionals to write for scholarly publication will diminish in the future. Writing for publication is, and will be, a way of life for college and university faculty and researchers. The need to equip present-day graduate students with the writing and publishing competencies they need is great. This author would

like to see colleges and universities everywhere begin offering practical doctoral-level courses about the basics of scholarly publishing. Those who are interested in offering such instruction are invited to contact the author who will be glad to assist in whatever ways possible.

D. Barry Lumsden

FINANCIAL MANAGEMENT OF UNIVERSITIES IN INDIA

The National Institute of Educational Planning and Administration had organised a programme for Finance Officers of Indian Universities in May 9-20, 1983. This is part of the efforts of National Institute of Educational Planning and Administration to ensure that Financial Administration became management oriented. There are training programme organised for Finance Officers working in the State departments of education either in secretariat or directorate and in universities.

The current orientation programme for Finance Officers of universities from May 9 to 20th, had the following specific objectives:

- (1) to enable the participants to appreciate the role of education in general and higher education in particular and specially its contribution to the socio-economic development of the country;
- (2) to develop in them better comprehension of the existing system of Financial Administration in the Indian Universities and to facilitate its systematic review particularly in the context of changing dimensions of higher education in India;
- (3) to assist in the identification and understanding of the new role and responsibilities of the finance function in Indian universities and to assess its impact on academic programmes; and
- (4) to promote an awareness of the techniques of modern management in general and of modern financial management in particular, especially from the point of their applications in education administration.

In order to achieve the above objectives, a number of themes were chosen for discussion. The discussions were initiated by persons who are involved in planning and financing of higher education in India or any aspect of it and by those who have made special studies of certain aspects of financing and costing of higher education. The programme was directed by Dr. C.B. Padmanabhan Head Educational Finance Unit National Institute of Educational Planning and Administration under the overall guidance of Prof Moonis Raja, Director NIEPA. The Programme had also the guidance of Shri J.A. Kalyanakrishnan Formerly F.A. at the Ministry of Education and currently visiting Fellow National Institute of Educational Planning and Administration.

In order to weave the different themes in an integrated manner, a practical exercise was given to the II participating Finance Officers on an assessment of the Financial health of the universities. How does one assess the financial health of a university? What indicators can we use for this purpose? In an attempt to explore this a survey was made of some state universities whose finance and development officers participated in a training programme organised by NIEPA. The following ratios were worked out for this purpose.

1. Total Income/Total Enrolment
2. Total Expenditure/Total Enrolment
3. Income by Department/Enrolment in the Department
4. Expenditure by Department/Enrolment in Department
5. Fees/Total Income
6. Expenditure by Department/Total Expenditures
7. Income by Department/Total Income
8. Each item of Expenditure/Total Expenditure

9. Total space/No. of students
10. Expenditure on books/Total expenditure for library.

In addition, the participants were also asked to use the following guidelines for assessing the financial health of their universities.

1. How has the income of the University grown?
2. How has the Expenditure grown?
3. How has the income grown when compared with the growth of enrolment?
4. How has expenditure when compared with enrolment?
5. What is the per student expenditure for the University as a whole and for each department of the University and how has it changed?
6. How has per student income grown?
7. What have been the sources of income for the university and how it has been changing?
8. Can the university raise its income from any new source?
9. How effectively all the available resources are being used?
10. In which resource there is scope for better utilisation?
11. How intensively the available resources are being used?
12. Are the laboratories and the other available space being used effectively? Is the library fully used?

The exercise was done not only to assess the financial health of universities but also determine the deficiencies in the financial data base which is mainly contained in the budgets of universities. By now it is well known that the budgets—both in their format and process—need a great deal of reform especially when financial management has to proceed on a sound basis.

The total income of university is indeed the first indicator of financial health. But it has to be divided by the total enrolment of students so that one can know the per student income for comparing with other universities or change over a period of time. The same is the case with expenditure which was looked at both from total and per student of view. A university has a number of departments and each of them differ in regard to their income both total and per student, expenditure in aggregate and by student, the importance of a department itself varied in terms of its contribution to total income and expenditure. Further the composition of expenditure and income varies from one department to the other. How does the share of fees in the total income vary in the aggregate and by department? This information is of great use in knowing the potentiality for raising additional resources by the universities. The expenditure pattern is also of importance for looking at several aspects of the functioning of the university and its departments. What percentage of the expenditures is taken up by salaries and how much is being spent on other programmes or for equipment which are of direct significances for the quality of education in universities.

As is well known all the universities were finding themselves in deficits though the extent of deficits varies and the way in which the deficits were covered differed. Universities like Bombay met the deficits by their accumulated balances while others had to seek additional grants from state governments. The orientation programme addressed itself to the questions of how to ensure that deficits do not occur. For this purpose, methods of raising the income of the universities, carefully investing the available income and ensuring that such investment yielded the maximum income were discussed. Of late the public companies have been giving high interest rates on deposits entrusted to them and many universities were taking advantage of them. But some were prevented from doing so by the constraints contained in the universities act. The idea of carefully managing the cash so as to ensure liquidity was also discussed and demonstrated. Cash flow analysis becomes essential because of the continuous nature of the expenditures and discontinuous nature of income accruing to universities.

Table 1

<i>Ratios</i>	<i>Bombay</i>	<i>Burdwan</i>	<i>Gauhati</i>	<i>Vikram</i>
Total Income/T.E.	472	21950	219	230
Total Expenditure/T.E.	418	23855	284	234
Fees/Total Income	43%	3%	2%	7%
General Administration Expenditure as % to total	16	17	16	27%
Departments or academic as % to total	28	18	37	32
Examinations	21	9	16	27
Library	with other heads		3	17
Per student recurrent expenditures by departments in University of Bombay				
Economics	2432			
Sociology	1935			
Civics and Politics	2425			
Statistics	2234			
Technology	4252			
Expenditures on books/T.E. and library	29%		33%	40.2%
Expenditures on salaries for libraries/Expenditures on library	49%			

The composition of income of the universities varied. Examinations constituted a major source of income and the timing for the collection of examination fees and the actual examination fees could be carefully manipulated so as to objects by argumenting income. Fees collected by the universities varied in their importance in total income and there was scope for bringing them more in line with expenditures.

The grants received from state governments have also to be made more in keeping with the norms of expenditures on different activities in the universities. They have also to be released on time so that universities do not have to get overdrafts from banks and pay huge interests on them.

It was in the area of various aspects of expenditure that there was a great deal of emphasis. The budget being the document which bring out the expenditure and income position of the universities, the process of preparation of the budgets and their format came in for a great deal of discussion.

The present process of budgeting is emphasizing more the legal aspects of it and if the technical dimensions of the budget have to become more manifest, there is need for a participatory form of budgeting with more discussions with firm data base on various aspects of expenditure like the sources from which funds were obtained, the cost per unit for different items of expenditure the composition of expenditure and the functions performed by the expenditures and the objectives achieved with the help of the expenditures. If all these thing had to be done, there was no escape from having a new kind of budgeting and budget format which can more meaningfully related expenditures with objectives of university activities and physical targets.

All the functions going on in a university can be grouped under teaching, Reserch, Extension services and extra curricular activities of students. Each function can be subdivided further e.g. broadly both formal and informal education under formal education there are undergraduate, P.G., Proformal and in non-formal Non-collegiate, correspondence and External cell.

Under extension services there can be (1) adult education (2) Medical for general public (3) Agriculture activities for farmers and inservice training for workers.

The above functions have to be further classified into programme and activities. In fact the programme and activity classification is the basic unit of accounting in the budget. B.A. degree programme in economics can be one unit. M.A. degree is another. It will be readily seen that presenting the cost of a degree programme is not easy because of the joint nature of the activities considered but this is the most useful part of the new kind of budgeting.

The consideration of expenditure on the basis of its distribution among the different functions and objects will enable decision makers to know whether money is spent efficiently and where there is scope for improvement.

C.B. Padmanabhan

OUR RESEARCH AND RESEARCH SCHOLARS

More than a year after the submission of my thesis I was informed by the university that, after considering the reports of the examiners, it had been decided that I be allowed to revise and resubmit my thesis within one year of the date of supply of the comments of the examiners to me.

One of the main suggestions for improvement, as supplied to me by the university, was : "In part one of his thesis the candidate should consult...[the name and year of publication of a book]".

The other suggestions, as supplied to me, required little more than either the correction of some typographical mistakes or slight additions to, or readjustment of, the whole. So the needful in respect of all these was accomplished in a couple of weeks.

And then started my search for the book in question. I had all along been under the impression that the book would be available somewhere in a University library—here, there, at least somewhere in the country. The search, therefore, began with casual visits to the neighbouring seats of learning. But the book could not be traced in any of these libraries. Before long I addressed letters to the major libraries in the country, so that I could have the book on inter-library loan basis.

Nearly 80% of the letters thus addressed remained unacknowledged; and the remaining 20%, which evoked responses, carried nothing beyond the one-line information: "Sorry, we do not have this title in our collection." Then I turned to the leading publishers and book-sellers of Delhi. "Is this title available in your ready stock?" I enquired. "Can you supply this title?" I asked. But most of them honestly replied: "No".

Helplessly I rushed from place to place and from library to library. But the efforts went all waste: the problem remained a problem for a 'that. I personally visited the libraries of all the leading institutions in Delhi, contacted almost every friend I could think of, and bothered every well-wisher with the request to trace out the book under reference. But the nut, now I realized, was not easy to crack.

Meanwhile, the details of the publication were kindly supplied by the Delhi Branch of the American Library. While regretting their inability "to procure publications for sale", they suggested that I "should be able to order this material through one of the leading Indian book-sellers." I personally contacted quite a few leading Indian book-sellers but all in vain.

Restlessly I rushed to the Delhi Branch of the British Council Library. It was, there, in the reference section, that I came in contact with the first librarian who was in fact what a librarian should be like. She was the first to appreciate my problem and seemed to have the imaginative sympathy to share my anxiety. The deep sense of sympathy with which she listened to my impassioned monologue and the under-current of hopefulness that marked every word she uttered regarding the probable solution of the problem could hardly be over-estimated or over-praised.

As advised by her, I visited an International Book Company the same evening, but could not find the material even there. "As such", I wrote to her the very next morning, now I depend solely on the British Council Library resources. Please, therefore, see that the matter is urgently pursued." The quick response made by her was quite encouraging: "We have already written to our Head Office requesting them to try and locate a copy of [the material I needed] and to send it to us on loan. We will inform you as soon as we hear from them."

The assurance was evidently great but my anxiety was greater. How could I rest on my oars? Before long I addressed letters to numerous University libraries abroad, requesting them either to help me with a copy of...on loan or to suggest how I could go in for one on my own.

The response made by Rutgers State University, New Jersey, was quite informative:

...I regret to inform you that we are unable to fill your request. The book in which you are interested is currently being used by our students of English Literature, and we are not able to justify its absence from the library for any length of time.

However, I am happy to report that this title is still in print, and may be purchased directly from the publisher. The order number is..., and the publisher's address is...

The advertised price of the book is...

The University of London Library (The Senate House, Malet Street, WC1E 7HU) replied:

...We do have a copy of the 1967 edition only but regret we would be unable to lend it to another library as it is in great demand from our own students throughout the year.

We can suggest that you contact the British Library Lending Division, Boston Spa, Wetherby, Yorkshire, England—who may be able to give you a location in this country willing to lend a copy abroad.

And the British Library Lending Division, Boston Spa, replied:

...I'm afraid we do not have the item you require, though we do have some locations for it at University Libraries. I suggest that your best course of action is to apply to your own National Library...Calcutta 27 who perhaps could apply direct to America for you. This would seem to be the easiest and quickest method of obtaining the item.

But unfortunately our own National Library neither acknowledged the communication nor responded to it:

Meanwhile I had contacted a couple of friends having contacts with people in England and America. Dr. David Taylor of London University was contacted through a friend. Another friend had kindly addressed a letter to his brother-in-law in Louisville. The letter remained unacknowledged at first. But after the expiry of a few weeks my friend asked his wife to shoot another letter to her brother, pointing out very clearly that what they had asked for was only a book, not a passage. And to this letter the response was quite interesting:

I am glad to have your note. The matter seems interesting and urgent. You did not hint what the urgency is. Anyway, the moment I received your letter I made phone calls to all possible book stores in the city. I was told the book is out of print. Then I made a phone call to New York; it was 4.30 p.m. The office of the publisher was closed. Now I will contact the publisher on Monday and place the order. In case the book is available you will get it in 15 days.

I will try my best to get it and airmail it as soon as possible.

A fortnight later, the book was duly received—not one copy but two. And in the long last when, after incorporating the relevant points (which in fact were, ironically enough,

neither many nor indispensable), I got my thesis retyped and rebound (the whole process involving a net expenditure of Rs. 3000/-) I was told by one of the authorities:

Oh ! Mr. Malhotra, what was the necessity of all this turmoil. If the book was not easy to find, you could simply point out in the Preface: 'Despite my best efforts I could not lay my hands on it'.

May be, the Parthian shaft was to be delivered by the examiner concerned. Perhaps he never wanted all this to be done at this stage, and the suggestion was meant to be carried out at the time of publication!

R.K. Malhotra

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Book Reviews

Philosophy of user education by Girja Kumar and Krishan Kumar. New Delhi, Vikas Publishing House, 1983, p. 247. Rs. 125.

Education has come a long way from being the preserve of an elite group to becoming a fundamental right of common man—a class with not a very strong tradition of library use. This phenomenon coupled with explosion of knowledge in recent years on the one hand and steep rise in the cost of building up and maintaining an academic library, has forced librarians, all over the world to explore and develop ways and means of making fuller utilisation of library collection, a matter of great urgency and of primary importance. Unlike library orientation, which is concerned with explaining to the user the general technique of library usage and services and the lay out of the library, user education is introduction to user of information resources available in particular subject of his interest and technique of making use of those resources. It is to equip student with knowledge and skill so that he may find his own way in the library. The book has therefore not come a day too soon.

In fact we may trace the genesis of the idea for the book in the survey that one of the co-authors made to assess the use by university community of the periodicals in sociology, received by Delhi libraries. The

results (recorded in the book on pages 182-185) were appalling, though by no means unique. Among the various possible causes to which the low rate of utilisation were attributed, ignorance about their availability was one.

The explosion of knowledge in recent years and the emergence of various tools—indexing and abstracting journals, with descriptors to facilitate computerised compilation and retrieval—has created a situation where continuous and intensive efforts to explain their content and nature has become sine qua non for their fuller utilisation. The Parry Committee of 1967 in its survey found among university students ignorance about even such age old library tool as a card catalogue.

In fact Prof. George S. Bonn wrote an article on the need for “Training layman in the use of the library” as early as in 1960.

The book rightly begins with a historical survey of the various attempts made in the West in developing user education courses. Monticeth College experiment that was carried out in early sixties aimed at stimulating and guiding students “in developing understanding of the library and increasing competence in its use”. The idea was to correlate teaching programme with the resources available in the college. We learn from the Earlham College experiment that

the librarian was not only involved in classroom teaching but was associated closely with designing of the new courses. The user education programme at Earlham was so designed as to generate a multi-staged year round activity so that when he passed out from the college he was fully equipped in utilising library facilities. In this context the authors also describe in detail the Keller Plan of study developed by Prof. S. Keller of Columbia University and its experiment at the I.I.T., Delhi. Keller Plan is a self paced mastery learning system where student works on a course broken into several units and offers for test when he considers himself ready for it. The understanding of library resources and system is of pivotal importance in Keller method of instruction. A fuller analysis of experiments carried out at Swedish and British libraries would have increased the value of this chapter for students looking for history of user education experiments at one place.

The authors have taken great pains in collecting information on institutional back up for user education programme developed in the United States, Great Britain, Sweden and Australia. This institutional back up includes provision for financial assistance to facilitate experiment, made by voluntary associations such as Council and Library Resources (US) and Government agencies like British Library Research and Development Department. The financial assistance has helped develop user education packages and their utilisation through Travelling Workshop Experiment (TWE) in the UK and setting up Library Orientation Exchange (LOEx) in the US. LOEx functions as clearing house for providing information to its more than two hundred member academic libraries on available programmes on user education. The chapter is an eye-opener both for professionals and for the officials, specially when one discovers the state of despondency through which our academic libraries are passing. The situation becomes still more painful when we recollect that Dr Ranganathan had formulated his famous laws of library science in this country in early thirties and it included laws such as "Every book its reader" and "Books are for use".

From a history of user education and packages developed for this purpose the

authors come to methodology for conducting courses. In this context the authors describe the two methods, one developed by Dr P.J. Hill of the Primary Communications Research Centre, Leicester University, and the other by Nancy Fjallbrant of Sweden. The discussion centres round the style of communication and media for communication. The authors favour elements of individual instructions to form the dominant part of the course content. A wide range of media—development of signs, lectures, seminar, student assistants, tapes, slides and programmed instructions etc. have been evaluated and their relative merits discussed.

The penultimate chapter is devoted to less developed countries and user education. Here the authors have rightly emphasised that countries like India should not import models developed abroad and put them to practical use in unmodified form. Changed sociological framework on the one hand and relevance of information on the other are two major factors, that would call for desired modification. Compilation of user profile, specially in university and research libraries would facilitate suitable modification.

The book concludes with a final chapter on philosophy of user education where the authors identify the components of user education namely (a) user awareness, (b) library orientation, (c) bibliographic instruction, and (d) interest profile. They come to the conclusion that user education has yet to achieve a degree of stability, clarity and organisation to achieve the position of a body of conceptual knowledge. "Indeed it is too premature to talk of conceptual or general theory framework for user education".

In spite of their best efforts to make it a comprehensive study, there are certain areas that have remained untouched. For instance, the authors have not discussed the necessary qualities, qualifications and attitude of those who would conduct the course for user education. Some favour subject qualification followed by professional qualification as essential prerequisite for taking up teaching function by librarians. There are others who while not disputing the need for subject knowledge, put greater emphasis on personal qualities such as enthusiasm, ability to communicate, friendly approach, humility and maturity. It is also unfortunate that

not enough attention was paid to proof-reading, resulting into systematic becoming *sustematic* (225), help becoming *halp* (205), more becoming *mere* (200), form becoming *from* (159) and conceived becoming *concerned* (37). The authors could have avoided using jargon laden language to improve communication quality of the book. Despite these minor blemishes it is a thought-provoking effort and its ideas will reverberate among professional circle for many years to come. It proves once again that like all true scholars Girja Kumar and Krishan Kumar are restless souls always looking for new ideas and new vistas in the fields of librarianship. By writing this book they have verily extended the boundaries of professional literature. The UGC may well think of bringing out a cheaper edition so that it is accessible to a large number of prospective librarians.

S. Ansari

Readings in English as an International Language, by Larry E. Smith (ed.), Oxford: Pergamon Press Ltd., 1983. pp. 179. Price \$11.95

The contributors to Larry Smith's book, recognizing the plurality of Englishes and a polymodel approach "based upon pragmatism and functional realism" (Kachru, 1983) for its teaching across cultures, concentrate on a vital *functional* aspect of English in world context, i.e. English as an International Language (EIL).

Readings in English as an International Language addresses itself to both the native and non-native speakers of English from the point of view of cross-cultural, cross-linguistic interactions in international communication contexts. Although a good command of English grammar, lexis, and phonology is necessary to facilitate international communication, it is not sufficient. In his preface to the book Larry Smith notes:

Information and argument are structured differently in different cultures, the place of silence, appropriate topics of conversation, and the expression of speech act functions, e.g. suggestions and refusals, are not the same. Levels of politeness, irony, and understatement are

frequently misinterpreted when the speakers come from different cultures. Thus, native as well as non-native English users need training in how to recognize and cope with these communication barriers and how to develop strategies to overcome them. (pp. v-vi).

The geographical spread of English and its present status as the *lingua franca* of the world have made it imperative to view the language not from the native-speaker's stand but from *any-speaker's* stand. Like Braj B. Kachru and others, Smith pleads for a change in attitude and assumptions of the native speakers of English. He is critical of the concepts of EFL/ESL/ESOL in English language education because English, like Sanskrit, Greek or French in the past, has now become an *international auxiliary language* as also pointed out by Randolph Quirk; and in order to accurately present the state of English language usage around the globe, he prefers the term EIAL (English as an International Auxiliary Language), or more functionally, EIIL (English as an International and Intranational Language), which may or may not be parallel to the national language but one of the languages of the country. With a world view of English, he pleads for its denationalization, shunning all linguistic chauvinism.

The sixteen articles published from 1976 to 1982 collected in the present volume, seek to explain, among other things, the concept of EIL, and based on empirical studies, discuss the questions of intelligibility, comprehensibility, and social acceptability of English in international setting as also the problems of materials and method for teaching EIL, and contrastive discourse.

The first three articles by Larry Smith introduce the concept of EIL, which basically refers to functions of English across cultures, and not to any given form of English. EIL is a language, not a corpus; it is reformative in character, and conceptually distinct from Basic English; it aims at preparing students to operate with English in unknown situations by teaching them a range of skills of adaptation; it seeks to develop both verbal and non-verbal aspects of inter-cultural and inter-variatal communicative competence. It is in no way

an ESP, which seeks to develop language skills for restricted purposes: international communication cannot be reduced to the limited range and patterns of ESP.

According to a pilot study by Donald Campbell et. al; the fifth article in the book, skills for ESP are not perceived to be greatly desired in either EFL or ESL situations. Willard D. Shaw's empirical study "Asian Student Attitude Towards English" shows the Indians, Thais, and Singaporeans greatest preference for the utilitarian uses of English and acceptance of local models of English. The two papers indicate the consequences of EIL approach.

The authors of the following four papers (6-9) study the native and non-native varieties of educated English from the point of view of intelligibility, comprehensibility and acceptability. Their conclusions may be summed up as under :

- (a) Since native speaker phonology does not appear to be more intelligible than non-native phonology, there seems to be no reason to insist that the performance target in the English classroom be a native speaker (Smith and Rafiqzad);
- (b) Students need active exposure to both native and non-native varieties of English in order to improve understanding and communication (Smith and Bisazza); and
- (c) The concept of 'Standard English' is necessary to maintain an unbiased, non-cultural, non-parochial, non-localised, neutral model, atleast as a reference, for international intelligibility, comprehensibility, and/acceptability or as appropriate educational target for teaching (Peter Strevens).

There are three articles (10-12) that deal with the questions of materials and method for teaching EIL. N. Krishnaswamy and Salim Aziz discover that most textbooks produced by native speakers of English tend to reflect their "linguistic imperialism and cultural colonialism" (p. 100) which hampers international/intercultural education. They also emphasize the need for research in the area of understanding values. James Baxter demonstrates, with particular reference to

interactive listening, how subscription to EIL approach leads to a re-appraisal and re-formulation of teaching materials. "The key concepts in interactive listening are diversity and adaptation: the diversity which will be encountered by the users of English in international situations, and the adaptive stance which they will need if they are to succeed." (p. 110). Larry Smith and Richard Via discuss the usefulness of drama techniques in EIL teaching which includes exercises in relaxation, observation, Talk and Listen, and improvisation.

The last four articles concentrate on the important issue of contrastive discourse. George Renwick's paper explores the *particular points* on which Australians and Americans differ from each other, specially in their commitments to friendship and work. Christopher Candlin in his lengthy presentation focusses attention on communication and discourse in general and explores certain relationships between discursal patterning and learners' interpretive strategies in the process of English language learning. Michael Clyne's two papers deal with communicative competences in contact, and culture and discourse structure: the first is an interesting contrastive survey of Italian, Greek and German speaking immigrants' responses vis-a-vis the Anglo-Americans in Australia, to 15 communication rules; the second deals with such aspects of discourse like degree of linearity, verbality and formalism, and the rhythm of discourse. However, he indicates the need for much more research of contrastive nature to make English teaching programmes relevant and purposeful.

The EILists on the whole point to the dual need for specific training of (i) non-native users of English for communicating with other non-native speakers, and (ii) native users of English for interacting in English with non-native or other native speakers who use a different national variety. Both groups need to learn how to produce an appropriate, socially acceptable and naturally correct sentences; the organization of verbal means for socially defined purposes and the sensitivity of language for situations, relationships, intentions etc.; the paralinguistic (facial and gestural), proxemic (spatial) and language organizational patterns in cross-cultural communi-

cation. It is fallacious and self-defeating to adopt or maintain the normative ideology of the target community in teaching English internationally.

A teacher placed in interlingual or intercultural setting can possibly prove the value of variety and diversity, and appreciate the need for de-racializing English, which the biased monolithic speaker of the language of wider communication can hardly sense. The local varieties, howsoever deviant, must be institutionally adopted, if they pose no difficulty in mutual interaction and satisfy learner's needs. To achieve effective communication, the traditional norms in L₂ teaching must be replaced by the new norms developed around the non-native varieties, integrating the socio.linguistic research and themes. The teacher, native or non-native, without imposing himself, can help develop learner's instruments of knowledge, can assist him to master the medium which ultimately contributes to the growth of his consciousness.

Smith's book is a plea for greater understanding from language teachers for the social nature of language learning and using

in a wider, international context. The volume is seminal to the teaching and understanding of EIL, a movement which needs support from both the native and non-native practitioners of English all over the world.

Readings in English as an International Language is not only impressive and stimulating as an introductory to EIL but also a valuable reference book, offering a series of articles that deal with the socio-linguistics of learning and using English as a non-native and/or international language. At the end of the book are given a useful bibliography and notes about the authors of the articles, though regrettably, no index.

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Contents

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S. Bisaliah

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G.K. Chadha and R.K. Sharma

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Our Contributors

A. Mathew is at present working as Project Associate Fellow in National Institute of Educational Planning and Administration, New Delhi.

Amrik Singh was Vice-Chancellor of Punjabi University, Patiala and Secretary, Association of Indian Universities, New Delhi.

C.B. Padmanabhan is currently working as Head of the Educational Finance Unit, NIEPA, New Delhi. He has been working in the area of training Educational Administration particularly in the area of financing and Economics of Education. He has several publications and studies to his credit.

C.R. Prasad Rao presently Head of the Department of Sociology, is teaching Sociology for 17 years in Andhra University and published a number of theoretical and research papers in leading journals of India.

D. Barry Lumsden is Professor of Higher Education and recipient of the Phi Delta Kappa International Award for Outstanding Education Leader in America and the Outstanding Service Medallion of the American Association for Adult and Continuing Education.

H.M. Rajyaguru is Reader at Faculty of Social Work, M.S. University, Baroda. He has 18 years of Social Work experience in U.S.A. and India. Number of his articles have been published in the nationally and internationally reputed journals.

Harinder Nanda Mahajan is currently doing research to be sponsored by Association of Indian Universities. She has co-authored a book and published several articles in professional journals.

John Kurrien has recently resigned from the Tata Institute of Social Sciences, Bombay and has started an educational Institute—Centre for Learning Resources, Pune—concentrating on inservice teacher training, action-research projects and development of instructional materials for schools.

M. Shree Rama Murthy is Reader in Education, College of Education, Osmania University, Hyderabad.

M.V. Ananthakrishnan is an Assistant Professor in the National Institute for Training in Industrial Engineering, Bombay. His areas of research are educational technology and science education. He has more than 45 papers, publications in national/foreign journals and conferences.

N.K. Seth is in the faculty of Roorkee University since 1966 and his field of specialisation is Organisational Behaviour.

Naveen Kumar Gupta is Research Scholar in Psychology in the Department of Social Sciences, Roorkee University, Roorkee.

R.K. Malhotra of S.D. College, Panipat, is a Specialist in linguistic, syllabi planning, poet, critic, short-story writer, scholar. He has several research papers to his credit.

R.K. Singh is Lecturer in English at Indian School of Mines, Dhanbad.

S.K. Srivastava is working as a Lecturer in Psychology, Government College, Bhiwani (Haryana). He has published twenty-five research papers in various reputed journals.

Swarn Pratap is Head of the Department of Humanities and Social Sciences and Coordinator, Industrial Management Centre of Roorkee University, Roorkee.

R.D. Godbole a former Principal and Head of the Physics Department, Ruia College, Bombay, was a Director of UGC sponsored Summer Institute in Physics for Science Talent Search Students (1967) and another for College Physics Teachers in Bombay, 1969.

R.S. Raju is teaching at the Department of Commerce and Management Studies, Andhra University, Waltair. He has published about 15 articles in leading journals and newspapers.

S. Ansari is Librarian, Zahir Hussain Library, Jamia Millia Islamia.

Sunila Gupta has taught in a degree college in U.P., served as a Research Officer in an ICSSR Project in Udaipur University and presently busy in Post-doctoral research on Science, Technology and Women Status in India.

U.S. Prasad is Reader and Head of the Department of Commerce, Regional College of Education, Bhubaneswar. He has at his credit a number of articles, research papers and innovative literature for the improvement of school education. He has authored a book titled '*Economics of Retail Management*'. He has conducted a number of workshops and seminars as Programme Director. Recently, he was National Director for conducting, in-training workshops sponsored by the UNESCO for training of teachers in commerce at plus two level.

Vempadapu Venkata Ramana is Lecturer in Sociology, S.V. Degree College, Parvatipuram. He is a co-author for two sociology books in Telugu (3rd is in press) and published four papers.

Y. Raghaviah is Professor and Head of the Department of Public Administration, Osmania University. He has contributed to the Indian and foreign journals on varied aspects of Higher Education and Management. His specialisation is Administrative Theory and Comparative Administration and Systems of Higher Education Management.

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CONTENTS

INSAT-IB and Higher Education	<i>Rais Ahmed</i>	... 301
Planning and Development of Distance Education	<i>Ruddar Datt</i>	... 305
Public Examinations in 2001	<i>H.S. Singha</i>	... 315
Intercultural Cooperation in Higher Education	<i>Ettore Gelpi</i>	... 323
The Role of Humanities and Social Sciences in Engineering Education	<i>S. Ambirajan</i>	... 333
From Secondary to Higher Education: Focus on Women	<i>Karuna Chanana Ahmad</i>	... 349
Educational Equality and Economic Opportunities: A Comparative Study of Scheduled Castes and Non-Scheduled Castes	<i>Kusum K. Premi</i>	... 363

Notes From Research

Education, Earning and Occupation of Weaker Castes	<i>Alexander V. Verghese</i>	... 373
College Teaching—Description and Analysis	<i>G.M. Patted</i>	... 381
Influence of Institutional Autonomy Among Students	<i>R. Venkatapathy</i>	... 389
Interactional Effect of Length, Style and Handwriting in Evaluation	<i>Bharat Bhushan</i>	... 392
Student Perception of the Purposes of Higher Education	<i>P.J. Sathiaraj</i>	... 395

Communications

Why Raju Fails to Learn English	<i>P.T. George</i>	... 399
Financial Management: An Imperative to the Temples of Higher Learning	<i>Furqan Qamar</i>	... 403

Power, Involvement and Organisational Effectiveness	<i>M. Devadoss</i>	... 407
Educational Technology in Higher Education	<i>M.B. Menon and P.K. Sahoo</i>	... 408

Book Reviews

The Higher Education System: Academic Organisation in Cross-National Perspective by Burton R. Clark	<i>V. Selvaratnam</i>	... 415
Recurrent Education in Yugoslavia by Niksa Nikola Soljan (Ed)	<i>Brahm Prakash</i>	... 418
University Teachers and Their Problems by B.N. Sinha	<i>P.C. Bansal</i>	... 420

Books and Journals Received

Our Contributors

INSAT-IB and Higher Education

RAIS AHMED

There are many problems in higher education, some of which are related to availability of funds, economic development and employment, society's will to strike a proper balance between discipline and freedom in academic institutions and of course, the creation of flexible course structures, syllabii to take into account rapidly growing knowledge, and methods of teaching designed to involve students in thinking, questioning, reflecting and creating. A problem of great concern, however, is the seemingly divergent pulls of quality and quantity.

There has been a phenomenal expansion in higher education—such as perhaps has not taken place in any other country. The number of colleges and universities has grown, as the number of students has grown. The growth rate has been faster than that of our population. Yet we are way behind other countries in terms of the percentage of the age group 18 to 24 in the population which is enrolled in the colleges and universities. There are many areas where enrolment is far below the national average. There are sections of the population for example, the poor, the tribals, and the scheduled castes, the rural people, the women who are behind others in higher education. The thirst for knowledge and the urge to make a living by means of higher levels of education has not abated and the tide cannot be turned merely by saying that no more colleges need be opened.

On the other hand the tide of numbers has impoverished the quality of education. Student-teacher ratios have suffered, the expenditure per student in real monetary terms has declined, average facilities in our colleges and universities are not the same as before. The interaction between students and teachers—in the form of tutorials or seminars, in laboratory and theoretical projects, in private discussions between teachers and the taughts is

not the same today as we had 25 or 30 years ago. No wonder the whole country is anxious about standards of education, about the declining role of the teacher in cultivating the many facets of a student's personality, his sense of values, his discrimination and judgement.

We are very fortunate indeed that the dilemma can be to a large extent resolved by modern technologies. Teachers can be assisted to teach better with the help of audio and visual aids, and lectures as well as seminar sessions can be audio or even video taped so that those who were unable to attend may also be benefitted. Self learning materials can be produced in large numbers—not only in print but also in other forms. They can be master minded by the best experts, and students in their turn can study them in libraries and reading rooms whenever it suits them best. Yes, this means additional expenditure but undeniably the enrichment of learning and access of more people to high quality education can be ensured—in a cost effective manner.

Again, fortunately, the country has gone "cosmic", we now have a satellite which can relay TV programmes, which can be viewed in all parts of the country particularly with the help of low power local transmitters which are being installed in all towns—even towns with a population of 100 thousand. The considerable expenditure on the Satellite, which will be used for many other purposes, has been to a large extent justified because of what educational benefits we can reap with its help. In principle, every one desirous of receiving an educational programme can do so through community viewing. On this facility the whole country can be unified by some common educational thrusts and at the same time each region can be served according to its needs. There are exciting possibilities of class room situations, seminars or tutorial sessions to be beamed, vocational and technical courses requiring great deal of visuals to be conducted, and programmes for teachers' further education taken up without their having to leave their institutions. These programmes and facilities could form the core of a University of distance education which has been recommended to Government from various forums and which may now be soon started.

However at this stage we must be realistic—the ultimate will be achieved in the years to come—at the moment we should undertake that which is achievable.

The present position is that our college and university teachers who are to play a crucial role in producing suitable programmes have no acquaintance with the new TV or radio medium, and in the university system there are very limited facilities available for doing so. Therefore, a small but carefully planned, beginning has to be made, with provision for monitoring and evaluation so as to continuously expand and improve the programmes.

The University Grants Commission as an agency concerned with all universities and particularly responsible for maintenance of quality and standards has naturally taken the initiative. One hour has been assigned to higher education in the satellite programmes and the Commission has decided to set up training and production facilities with standard equipment

in six institutions—some more may be added within the next year. A central programme committee has been set up to coordinate and channelize suitable material for daily telecast, to doordarshan. It has been decided to make what are called enrichment programmes at the undergraduate level. Topics in different disciplines are being chosen so that the largest number of students and indeed any educated person may benefit. Some topics will relate to national development and national concerns such as agricultural or industrial visions, achievements, shortcomings, future perspectives—or national integration, secularism and socialism which are a part of our constitution. These subjects will receive scholarly attention and will help to give breadth of knowledge and awareness to the viewers. There will be special programmes for teachers in higher education to enable them better to handle their class and examine work, to give them upto-date knowledge and particularly to make them familiar with educational goals of their profession. Some selected world-class educational TV programmes will also be procured because of its excellence, and in many cases the thrill of learning which, distinguished makers of those programmes, can bring to our student community.

The expectation is that these programmes will go on the air within a few weeks, for experimenting and adjusting the system. By the middle of the year regular programmes are likely to be telecast with colleges and universities provided part-assistance in setting up receiving centres. The entire programme will be watched and evaluated so as to improve it, and cast it in a higher mode during the Seventh Plan. We expect that the TV programmes will be supported by other learning material and that its impact will be felt throughout the country and in the performance of all students in their studies. This programme incidentally opens great vistas of new creative activity by teachers in colleges and universities. Those who have been constrained by chalk and talk can now learn to present their subjects with the new medium in a much broader frame to much larger audiences.

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Planning and Development of Distance Education

RUDDAR DATT

Correspondence education, started in India in 1962, is now more than two decades old. Although education ministers, UGC Chairmen, Vice-Chancellors and other eminent educationists have emphasized the need to strengthen this technique of education, make it more broad-based and promote it in such a manner that all kinds of courses are covered by it, but the situation as it prevails today reveals that most of the correspondence institutes/Directorates undertake traditional courses run by Universities like B.A., B.Com., M.A., M. Com., M.Ed., LL.B. etc. Science courses like B.Sc., M.Sc., Computer Science courses have received practically very little attention by correspondence educators. Some professional courses like LL.B., Diploma in Journalism, Library Science, Personnel and Marketing Management have been undertaken by some Universities, but the total number of students taking science and professional courses is a very small fraction of the total population benefitting from correspondence education. In other words, correspondence institutes/Directorates have become a sub-system of the traditional Universities, covering a small section of the courses run by them, which are considered to be economically viable. Data given in table 1 reveal the position prevailing in 1982-83.

Firstly, undergraduate courses account for a total enrolment of 92,272 in 23 universities, accounting for about 58 per cent of total enrolment. These courses are PUC, B.A., B.Com., B.Com. (Hons.), and B.Sc. Secondly, 30,363 students study traditional M.A. courses, 11,381 students study in M.Com. and barely 1,748 are enrolled for M.Sc. Total post-graduate students number 43,492 i.e. 27.2 per cent of enrolment. Thirdly, professional courses of the traditional variety like B.Ed., M.Ed., LL.B./B.G.L./B.A.L. and B.Litt. account for 20,881 students i.e. 13.0 per cent of total enrolment. Fourthly, non-traditional certificate courses account for an enrolment of only 3,067

Table 1

COURSEWISE DISTRIBUTION OF STUDENTS STUDYING IN VARIOUS UNIVERSITIES OF CORRESPONDENCE EDUCATION (1982-83)

	<i>Enrolment</i>	<i>Percentage of total</i>
A. Undergraduate Courses		
1. Pre-University course	4,601	2.9
2. B.A.	47,936	30.0
3. B.Com. and B.Com. (Hons.)	29,736	18.6
4. Unclassified between B.A. & B.Com. ¹	8,550	5.4
5. B.Sc.	1,449	0.9
Total undergraduate	92,272	57.8
B. Post-graduate Courses		
<i>M.A. (Arts and Social Sciences)</i>		
1. Political Science	6,093	3.8
2. Economics	5,279	3.3
3. English	4,750	3.0
4. History	4,708	2.9
5. Public Administration	1,493	0.9
6. Tamil	1,484	0.9
7. Hindi	1,266	0.8
8. Sociology	1,010	0.6
9. Punjabi	357	0.2
10. Kannada	345	0.2
11. Sanskrit	121	0.1
12. Russian	35	0.0
13. French	23	0.0
14. German	5	0.0
15. Unclassified ²	3,394	2.1
Sub-total	30,363	19.0
M.Com.	11,381	7.1
M.Sc.	1,748	1.1
Total Post-graduate	43,492	27.2
B. Professional Courses		
<i>(a) Degree Courses</i>		
1. B.Ed.	8,988	5.6
2. M.Ed.	7,525	4.7
3. LL.B./B.G.L./B.A.L.	3,938	2.6
4. B. Litt.	430	0.3
	20,881	13.0

	<i>Enrolment</i>	<i>Percentage of total</i>
<i>(b) Diploma and Certificate Courses</i>		
1. P.G.C.T.E.	528	
2. P.G.D.T.E.	128	
3. Diploma in Financial Management	496	
4. Diploma in Operations Research for Management	113	
5. Diploma in Law	1,802	
	<hr/>	
Total Professional courses (a + b)	3,067	1.9
	<hr/>	
	23,948	14.9
	<hr/>	
Grand Total	1,59,712	100.0

(1) *This includes 1,089 M.A. students from Bombay and 2,305 students from Annamalai for which course-wise details were not available.*

(2) *This includes 1,925 students from Bhopal, 169 from Jammu, 369 from Udaipur and 6,087 from SNDT Women's University for which break-up into B.A. and B.Com. courses was not available.*

Source: *Compiled from data supplied by the University Grants Commission.*

students i.e. 1.9 per cent of the total enrolment. Lastly, the students enrolled in science courses account for barely 2 per cent of total enrolment.

To sum up, 98 per cent of the total enrolment in correspondence courses is confined to traditional courses run by the Universities and barely 2 per cent of the diploma and certificate courses are of an innovative nature. Thus, to describe the correspondence Directorates/Institutes as a sub-system of the traditional university structure is very appropriate.

It may be mentioned that the total number of students enrolled in correspondence courses in India is 1.59 lakhs as against 29.52 lakhs (excluding PUC courses) in regular colleges and University departments. The share of distance education enrolment in higher education works out to be 5.0 per cent. Obviously, we are far removed from the goal enunciated in the National Policy on Education to impart instruction to 20 per cent of the total enrolment in higher education through the correspondence technique.

Region-wise distribution of correspondence students reveals the unplanned and lop-sided development of correspondence Directorates/Institutes in India. Out of a total enrolment of 1,59,712 students in the whole of India, the Southern Region accounts for a total enrolment of 1,00,817 students i.e. 63 per cent of total enrolment. The Northern Region accounts for 41,917 students i.e. 26.2 per cent of total enrolment, the Western region 14,615 students (9.1 per cent) and the Eastern Region accounts for barely 2,363 students, merely 1.5 per cent of total enrolment. (Refer table 2) In other words, correspondence education is concentrated in the Southern

Region, followed by the Northern region. Against it, the Western Region, and the Eastern region is very much under-developed in the use of this technique. This only underlines the lop-sided development of distance education. It also underscores the fact that correspondence education is totally unplanned. On the one extreme, we have correspondence directorates like Madurai with an enrolment of about 49,000 students and on the other extreme, we have 13 directorates with an enrolment of less than 3,000 students. Out of them, 7 directorates are such that their enrolment is less than 1,000. A minimum enrolment of 5,000 is necessary to make a distance education unit viable, but keeping in view the mushroom growth of 13 non-viable units, one wonders about the justification for their establishment and continuance.

Six directorates with an enrolment level of 10,000 and above viz., Madurai, Annamalai, Mysore, Andhra, Himachal Pradesh and Delhi account for 1.17 lakh students i.e. 73.4 per cent of total enrolment in all directorates. It is, therefore, a case of high degree of concentration and indicates the limited use of this technique in vastly populated regions viz., Madhya Pradesh, Gujarat, Orissa, Bihar, West Bengal, Assam and other small states of India. It also necessitates that steps should be taken to start new innovative courses where traditional courses have failed to attract students so as to make them viable.

Reasons for Lack of Proper Development

The question arises: What are the forces that have acted as shackles on the freedom of the Correspondence Institutes to develop? The following are the identifiable reasons for the prevailing situation:

- (i) Correspondence Institutes/Directorates are treated as mere appendages of traditional universities. Boggled by their problems, very little time is devoted by the Universities to promote this technique of education. Discussions go on whether a particular course is amenable through the correspondence medium, while discussion in Open University or University without Walls centres round the innovations to be made so that every kind of knowledge can be transmitted through the distance education medium; in our country, we are still at the elementary level of debate about distance education.
- (ii) Unfortunately, the present university structure exhibits a kind of asymmetry in the field of correspondence education. All educationists believe that for a good and meaningful system of education, the operators of the system should play a dominant role in decision-making for its conception, rectification, modification and growth. In our context, the operators (viz., the teachers and the non-academic staff of the Institutes/Directorates) are hardly associated with the process of decision-making. The University does decide what is good for them without knowing their difficulties, problems and approach to the solution of the problems. This asymmetry destroys all initiative

Table 2

REGION-WISE DISTRIBUTION OF CORRESPONDENCE COURSE STUDENTS
(1982-83)

	<i>Enrolment</i>	<i>Percentage of total enrolment</i>
A. Southern Region		
1. Madurai	48,654	30.5
2. Annamalai	18,388	11.5
3. Mysore	14,736	9.2
4. Andhra	13,998	8.8
5. Osmania	1,851	1.2
6. Kerala	1,795	1.1
7. Hyderabad	719	0.4
8. Sri Venkateswara	676	0.4
	1,00,817	63.1
B. Northern Region		
1. Himachal Pradesh	11,701	7.3
2. Delhi	9,822	6.2
3. Punjab	8,575	5.4
4. Rajasthan	5,767	3.6
5. Punjabi	2,441	1.5
6. Jammu	1,153	0.7
7. Allahabad	824	0.5
8. Kashmir	722	0.5
9. Meerut	543	0.3
10. Udaipur	369	0.2
	41,917	26.2
C. Western Region		
1. Bombay	6,603	4.1
2. SNDT Women's University	6,087	3.8
3. Bhopal	1,925	1.2
	14,615	9.1
D. Eastern Region		
1. Patna	1,567	1.0
2. Utkal (Orissa)	796	0.5
	2,363	1.5
Total	1,59,712	100.0

Source: Compiled from data supplied by the *University Grants Commission*.

for devising innovations. It only underlines the absence of autonomy in decision-making pertaining to the operation and development of correspondence education.

- (iii) Correspondence Institutes/Directorates do not have an identity of their own. Since they have not been considered as Universities or deemed-Universities, they can neither frame their syllabi nor innovate their system of examination. They have no option but to follow the syllabi of the traditional universities and adhere to their examination pattern. The public thinks that degrees of correspondence courses can have credibility only if the students have gone through the same course content and examination. Although this is a very naive view, but no effort has been made to dispel it. Rather, with the present university structure, it is not possible to dispel it. For this purpose, it would be necessary to set up an Open University or a few regional Open Universities whose sole job should be to work for the systematic growth of distance education.
- (iv) Correspondence Institutes do not enjoy financial autonomy to run their programmes, to make innovations necessary for imparting instruction through this medium so that it can be developed properly. It would be appropriate to say that most of the programmes of developing correspondence education are sacrificed at the altar of financial support. This is not to say that there should be no limit on the financial autonomy of Correspondence Institutes but to say that certain norms of provision of finance should be developed.

Developmental Issues in Distance Education

For the development of distance education, the following issues deserve attention:

(a) *Staffing Pattern of teaching faculty*: It is vitally necessary that Correspondence Institutes/Directorates should have an independent and competent faculty of their own. This should comprise of Professors, Readers and Lecturers. While recruiting this faculty, special aptitudes for writing reading materials should receive prime consideration. As far as possible, this faculty should undertake the preparation of scripts of reading materials. Unfortunately, many directorates are devoid of senior faculty positions, they are not adequately staffed by competent teachers.* Some eminent persons in the Universities, even in the UGC, are quite quick to criticise the quality of reading materials, produced by correspondence directorates. They would quote the excellence of the materials produced by Open University (UK), but conveniently forget that the Open University (UK) is being serviced by 1500 full-time members of the teaching faculty, quite a good number of

*Ironically, in Madras University, the Correspondence Institute services 40,000 students with a teaching faculty of 11 teachers. In Sri Venkateswara University, Tirupati, the Directorate is run without any full-time faculty.

their teaching faculty consists of professors who have distinguished themselves. It is, therefore, high time that the UGC revised its guidelines for the staffing pattern. It should lay down separate qualifications for recruitment of Faculty members. It should agree to the creation of senior faculty positions to be filled up through open advertisement.

(b) *Non-academic staff*: For a correspondence courses, the need and support of non-academic staff is highly necessary for developing an effective delivery system. Neither Universities nor the UGC have given any serious thought to this problem. This staff is required to despatch reading materials, to process assignments so that teachers can mark them, to organise library-cum-study centres, to prepare cassette tapes of lectures, to develop CCTV, to reply to queries of students, to maintain their records pertaining to admission, evaluation of assignments and examinations etc.

Correspondence directorates need special staff like proof readers, book producers, cartographers, designers, lesson keepers etc. Instead of getting their services piece-meal, it is more desirable to have them on the regular pay roll of the directorate.

To run a directorate of Correspondence Education with over 10,000 students requires qualitatively and quantitatively a different set-up of supporting non-academic staff. This should be appreciated.

(c) *Payment for contractual services*: Although an ideal situation would be that the entire work of correspondence education should be done by its own staff, but as the present UGC norms and university structure do make adequate provision for them, there is no option but to get work done on payment by outside teachers. In this context, the pitifully low norms of payment prescribed by the University/UGC act as impediments in the way of procuring the services of competent teachers. There is a need to re-examine the norms of payment for contractual services fixed a decade ago.

The present norms for writing reading materials are:

1. Rs. 100/- for a lesson of 10-15 typed pages for under-graduate course.
2. Rs. 150/- for a lesson of 15-20 typed pages for post-graduate course.
3. No rates are prescribed for translation.
4. No rates are prescribed for review of reading materials by competent teachers.
5. No rates are prescribed for checking assignments at the under-graduate/post-graduate level. The rates for correcting term-papers at the post-graduate level have also not been prescribed.

The Correspondence Directorates have been pleading with the Universities/UGC regarding the need for revision of these rates; some breakthrough has been achieved at the University level, but these proposals are not getting clearance of the UGC. The absence of financial autonomy acts as a hindrance in this regard.

(d) *Development of Library-cum-Study Centres:* The UGC emphasised in its norms the need for the development of Library-cum-Study Centres for correspondence students. This idea was aimed at providing besides reading materials supplied by the Directorates access to good books, journals etc. It was also conceived that tutorial guidance be also provided to students at such centres. This requires the establishment of good buildings with ample seating space and tutorial rooms so that the contact between the teacher and the taught is strengthened. Academically the idea is sound because the aim is to expose correspondence students to facilities so as to enable them to compete effectively with their counterparts in regular colleges/university departments. The need for such Library-cum-Study Centres is more intensely felt at the postgraduate level.

A centrally administered university prepared the scheme on the basis of UGC guidelines, but it had to abandon it because it was considered too ambitious. Thus, this idea was buried unceremoniously before it could be given a fair trial. Financial support could not be received for such a useful scheme.

(e) *Development of soft-ware and procuring hardware to use mass media:* More recently, some UGC experts have been toying with the idea of procuring some hardware to set-up close-circuit TV so that educational programmes can be video-taped and taken to the study centres. The University of Poona is making a serious effort to develop CCTV. The UGC Visiting Team while recommending the introduction of under-graduate course through Marathi medium has gone beyond its terms of reference to recommend the grant of block assistance to set-up CCTV and thus to use the video-tapes for extension of education. This requires some soft-ware, supporting staff, and creation of community centres to make the scheme effective. A very good idea indeed! But this would certainly require financial support. A senior UGC official is very keen that some breakthrough is made in the use of CCTV as a powerful teaching aid. Let us hope that UGC will give financial support to this project and the vision of academics to launch such a programme is not again frustrated by those who control the financial reins.

(f) *Contact Programmes and their intensification:* Distance education needs to be supported by the Contact Programmes. From an academic point of view, it would be desirable that teachers who prepare teaching materials are associated with contact classes. This helps the students to know their teachers so that they can again visit the directorate/institute to solve their queries.

For this purpose, teachers of the Directorate should have the autonomy to decide the duration and the scheduling of the contact programmes keeping in view the socio-economic characteristics of the students. Unfortunately, the UGC has prescribed in the revised guidelines much less number of contact classes than were provided in the original guidelines. The rationale for downward revision has not been given. Informal inquiries revealed that

the purpose was to reduce the costs. This is a highly undesirable way of taking decisions, simply on the consideration of marginal economy in expenditure. Moreover, it may be stated, experience indicates that a few more contact classes can give the students much more confidence and in some cases, inspire them to work for the course under the guidance of the teachers. The Directorates should, therefore, be given autonomy in taking decisions in this area. There are subjects like Mathematics, Financial Accounting, Micro-Economics, English grammar in which the students desire more contact hours. The Directorates should be free to decide the number of contact hours depending upon the nature of the subject and the needs of the students. The marginal benefit-cost ratio of this expenditure being very high, the game is worth the candle.

(g) *Provision of Special lectures:* At the post-graduate level, the students must come in contact with the best minds and this can be done by the provision of some special lectures by persons eminent in their fields of study. This would be very useful for the correspondence students. Correspondence course departments should be autonomous to take decisions in this regard.

The Way Out

Correspondence education needs to be freed from the stranglehold of traditional university structure. The best solution would be to set up two open universities to start with—one for the Southern Region which caters to over 1 lakh students and another in the Northern Region which caters to about 50,000 students studying under the Distance Education technique, and make the directorates affiliated to the Open University. Since the Open University would be concerned with the ways and means to develop the technique of correspondence education, the University bodies can devote themselves to the task of developing and innovating new techniques for delivery of instruction via the distance education medium. A decision at the national level by an act of the Parliament is necessary. Several committees have studied this question. At one time, this idea was being vigorously pursued by the Education Minister, but, somehow, was shelved. The need of the hour is to revive it so that it provides an enduring structure in which correspondence education can find a suitable climate to grow.

This may take time. There may be resistances at the local level. Education being a state subject, some states may not like their correspondence directorates to be affiliated to the open university. Such an eventuality cannot be ruled out. Under the circumstances, the second best solution would be to provide autonomy to the directorates of correspondence education within the University structure. This can be done by creating a faculty of correspondence education in the University with representatives of the Directorates of Correspondence Education and related departments. The faculty of Distance and Continuing Education should be responsible for considering all proposals pertaining to the functioning, expansion and development of non-formal education.

The Directorate of Correspondence Courses should be given the autonomous status of a multi-disciplinary department. This would provide freedom to Directorates to develop socially relevant courses in non-traditional areas (besides traditional areas). In this way, it would be possible to cut across the unnecessary stranglehold and the bossism of the University Departments. Such a bold initiative should be taken by some Universities and the experiment of autonomy should be given a fair trial. The Correspondence Course units should take their proposals directly to the faculties for clearance.

In respect of financial autonomy, the revenues raised by the Directorate from student fees should be used exclusively for the creation, extension and development of services needed for correspondence education. No part of the student fees should be appropriated by the University and/or state government for any other purpose except the development of correspondence education.

Besides, the UGC and/or State Governments should develop a system of subsidization of Correspondence Courses based on certain norms of expenditure per student so that this alternative technique of education can develop a proper infrastructure and a delivery system.

The functional autonomy provided to the Directorates of Correspondence Courses should not, however, isolate the teachers of the Directorate to participate in post-graduate teaching and research programmes of the University. For this purpose, the teachers of the Directorate of Correspondence Courses should be recognised as members of the respective departments. As such, they should be represented on various university bodies like academic council, the Boards of Studies, Senate/University Court, and Syndicate/Executive Council in the same manner as their counterparts in regular departments of the University.

The Education Commission headed by Dr. Kothari itself made the recommendation that while making grants available, it would be desirable to filter out government control. This principle should be applied to correspondence education as well. For this purpose, it would be desirable to standardise norms for grants, both for capital projects and maintenance purposes. The UGC gives grants on a plan basis. It would be more desirable to transfer those grants for subsidising correspondence education to non-plan expenditure. It is only then that more enduring financial support norms can be developed. If regular college/University expenditure can be treated as non-plan expenditure, then what prevents the government to treat expenditure on correspondence and continuing education as non-plan. The UGC should make a case for it and then urge upon the Government to make the much-desired change. Such a course can give financial autonomy to these institutions. Academic freedom is an essential condition of growth and to ensure academic freedom, financial support without state control is a *sine qua non*. The earlier it is realised for Distance Education, the better it would be for the progress of distance education in the country.

H.S. SINGHA

Public examinations are quite old in India. There is evidence of their existence in Nalanda and Taxila Universities. But they have now been institutionalized to such an extent that they have become a Frankenstein's Monster ready to eat its own creator. There is today a veritable crisis in public examinations. They were never under such a great strain. They were never so much called in question. Their contradictions were never so glaring. The result is that the public has lost faith in the present system of examinations. Students and teachers feel that they can be manipulated and misused. There is no denying the fact that malpractices in examinations are too rampant. They seem to defy any solution. I had conducted a survey of the unfair means used in university exam in 1974. Nearly 1 per cent of the students taking undergraduate examination were reported to use unfair means. The NCERT established a similar statistic for school board examinations. In addition to this we hear of faking of degrees, certificates and marks sheets, large scale leakage of papers, mass copying etc. The system seems to be breaking down under its own weight.

But how long will this crisis last? We would like to analyze it and try to look beyond it.

The Present Irrelevance

Our main thesis here is that public examinations have become irrelevant in modern society. They are a source of numerous contradictions and paradoxes. The system has become dysfunctional and is doing more harm than good in all socio-academic areas.

Pedagogically, the present system is based on misconceived assumptions which have led students and teachers to have an inverted perspective about

academic work. In this perspective examination results and grades have become the chief form of institutionalized value. The result is that learning has become misdirected, teaching is unprincipled and curriculum is eroded. It is a total inversion of pedagogy. Examinations have become counter-productive in the field of learning as they provide disincentives rather than incentives for it 'What is the use of working hard?' is a common question asked from Principals. The teacher's attention is being diverted away from the real objectives which are important for an all round development of children. It even curbs the teacher's initiative and originality. As far as the curriculum is concerned, the present system becomes self-eroding. The instructional objectives that are initially laid down cannot be pursued because of the system.

Economically, the imperatives of imitative industrialization have created a need to have a particular selection strategy to pick and choose those for whom alone the modern job-destroying technology can provide places. This is also directly related to our strategy for national development and the relationship we visualize between development and education. In spite of the labour of love put in by human capital theorists, we can recognise only a pseudo-relationship between education and development. It is a fair hypothesis to put up that education is only a process of screening which is carried out through the instrument of public examinations. It does not help in production but only distributes wealth. It seems to be related to productivity only because of social norms. The results of this process of choosing and chopping has been an economy of qualificationism in which qualifications, as certified by degrees and diplomas, act as the currency subject to constant inflationary trends. The qualificationist society does everything to earn qualifications even at the expense of real education.

Politically, examinations thrive because of the current bureaucratic culture with its supporting ideology of scientific liberalism and democratic idealism. Nevertheless, they have created a totalitarianism of the elite. This has led to a political paradox. Superficially, examinations appear to be compatible with the requirements of democracy, but in reality they undermine it. There is a clash between quality and excellence, between contest and monopoly and between the individual motivation and curbs put on it by selective allocation. The concept of equality of opportunity is our response to this paradoxical situation. But this is not a solution. Examinations only appear to be giving equal opportunity to all. They are always loaded in favour of the elitist or privileged groups. They help in the legitimation of exclusion. Further to soften the contradictions involved there is the concomitant warming up and cooling out dilemma. They warm up the upper classes and cool out the lower classes. But more than the political paradox created by examinations, they are downright anti-democratic and anti-man. They infringe upon inalienable human rights particularly the right to privacy. They also become tools for trivializing, de-individualizing, de-personalizing and even de-humanizing man. Their real bane, therefore, is the enslavement of man.

Sociologically, the public examinations in India have created conditions of disequilibrium. A society known for its traditional and unrelieved stratification has started using testocratic and democratic principles—both of exotic nature—for regulating its affairs. The rise of testocracy and the introduction of democracy in India have created a triangular context. On one side we find a clash between testocracy and egalitarianism, the former entailing that the best man win and the latter refusing outwardly to recognize any differences between individuals. On the second side there is a conflict between hereditary stratification defining status on the basis of birth and parentage and testocracy allowing full vertical mobility on the basis of merit as determined by test results. This tension reveals itself in malpractices to which we referred earlier. On the third side we have a conflict between hereditary stratification and democratic egalitarianism. All this creates a situation of disequilibrium. We must give credit to the Indian polity which has met it by demarcating the areas of operation for the three principles. We still operate on the basis of the caste and community on the purely social front. In the matter of admissions and employment, testocracy seems to reign supreme. Egalitarianism has been given a constitutional status and is apparently respected in all legal and civil matters. An incorrigible optimist may even see a brighter side to this triangular contest. Each principle keeps a check on the other and prevents it from either operating in its extreme form or from complete collapse.

There is no doubt that this irrelevance of public examinations has created pathological conditions for the society. We are completely disillusioned. The question arises as to how long can the society continue with this situation. Remedies may be difficult to suggest, but let us examine the trends so that we could imagine the shape of things to come in 2001.

The Future Shape of Society

In order to look beyond the crisis we have to visualize the shape of the society in the near future. Let us look at the demographic scenario for 2001. If we assume, after the Registrar General of India, the medium birth rate hypothesis, the 2001 census will establish a population of 945 million. By 2009 AD our 1971 population will double itself. *Such an enormous mass of population with a less developed economy to contend with will need more rather than less, efficient sorting out mechanism than at present.*

The economic scenario is equally dismal. Assuming that the growth rate until 1992 will be nearer 5·5 per cent as we had targeted in our last two five year plans and thereafter 7 per cent in the last decade before 2001, our agricultural sector will contribute 27·2 per cent to our national income, manufactures 24·8 per cent and infrastructures and services 48 per cent. In other words, we shall continue to be an agricultural society with manufactures becoming more of a key variable in peoples life than it is today.

¶ *Regarding employment, our labour force, will increase from 170 million in 1971 to 364 million in 2001. This more than doubling (121 per cent) of the work*

force in 30 years means that gainful and productive employment will have to be found for some 200 million new labour force entrants plus what is called the unemployed and the severely underemployed backlog which is estimated at a conservative 20 million. In terms of sectoral employment, the agricultural employment will increase from 130 million (72.2 per cent of the labour force) in 1971 to 214 million (58.7 per cent) in 2001, manufacturing employment will increase from 17 million (9.4 per cent) in 1971 to 60 million (16.6 per cent) in 2001, and employment in tertiary sector will increase from 33 million (18.4 per cent) in 1971 to 80 million in 2001. *Thus at the end of the century we would have doubled the labour force but we shall continue to be heavily agriculture-based rural economy.*

The political infrastructure has been fairly stabilized on democratic lines. An important feature of the political life in India is that most of the political parties are wedded to democracy. The way governments have been changing through general elections goes to prove that democracy has taken deep roots in India. Indeed, we can expect a greater participation of the people in the government and its agencies. The elitism in Indian politics with UK trained politicians dominating the scene has almost vanished. But bureaucracy will continue to be a force to reckon with and it will continue to need the support of public examinations.

The quantitative aspects of the educational scenario are relatively easy to describe. The school going population in India at the elementary level (Age: 6-13) will increase from 113 million in 1971 to 135 million in 1991 and then decline to 108 million in 2001. Similarly, the school going population at the secondary stage (Age: 14-15) will increase from 23.6 million in 1971 to 33.4 million in 1991 and will decline to 28.8 million in 2001. At the senior secondary stage (Age: 16-17) the enrolment is expected to increase from 21.8 million in 1971 to 33.2 million in 1991 and then decline to 30.7 million in 2001. For the higher education (Age: 18-24) the student population is likely to increase from 66.4 million in 1971 to 112.9 million in 1991 and then marginally decline to 112.8 million in 2001. The net result is that the total students population (Age: 6-24) will increase from 225.4 million in 1971 to 314.5 million in 1991 and then decline to 280.5 in 2001 (59.8). This decline, though it spreads optimism, is somewhat incredible. It is perhaps the result of our assumption that the birth rate would decline during these years from 35.5 in 1971-76 to 19.4 in 1996-2002. In addition to this explosion of numbers, the education system will also have to cope with the explosion of knowledge. This might necessitate new methods of examining and, more than that, supplementation of the formal system of education by an efficient non-formal system.

To Examine or Not to Examine

Will the new society and its education system go on tolerating the irrelevance of public examination? Authorities in many Western countries are taking, or are about to take, steps to reduce their dependence on public

examinations as basic for issuing school leaving certificates. In Canada, Ontario abolished its examinations in 1967, Manitoba did so in 1970. Queensland has announced plans to terminate all its secondary school examinations, and other Australian States have given notice of similar moves. Sweden has abolished all external examinations and Norway is reported to be moving in the same direction. Great Britain is experimenting with school-based examinations and reference tests, while the United States has for many years operated an elaborate system of aptitude and achievement testing not tied to any particular school prescription. But all these countries are at higher stages of development. They are not threatened by the explosion of population. Their economies are sound enough to absorb largely the entire out-turn of educational institutions. This will, obviously, be well nigh impossible in India—at least in the near future. But, at the same time, the deep-rooted democratic values—similar to those of the Western World—will demand, in the interest of equality of opportunity, the application of universalistic principles of selection for admission or recruitment. As special tests for recruitment or admissions may not be possible, public examinations will continue to play their role with importance being attached to their certificates. All that can possibly happen is that, along with other under developed countries, there will be a greater tendency at the elementary level to drop examinations altogether and to substitute for them automatic promotions. But at the higher stages of education, although people will continue to be dissatisfied with external examinations, they will not be able to do away with them completely. The abolition of examinations, although it may free schools and colleges from unnecessary pressures and would enable them to aim at the right things, will not be acceptable to the society. What can perhaps be attempted is to make them direct measures of all the educational objectives.

To analyze the situation more precisely we have to look to the demographic scenario in conjunction with the economic scenario. Examination provide us a screening device for sorting out the population into desired categories in accordance with the net work of political and economic roles. In 2001 the sorting out would be much more difficult as it will have to contend with a population as big as 945 million and a labour force as big as 364 million—that too in the face of a less developed economy. Accordingly with tough competition for economic and other position, only the selections done through examinations which are free from particularistic principles would work. But paradoxically, the centralized—public examinations will become more difficult to conduct because of the large number of candidates that will be required to be handled. The external examinations, as presently conducted, require such a cumbersome system that sufficient control cannot be exercised when the numbers go up. Moreover, as a consequence of the political and educational scenarios, teachers would be more educated, well trained and more aware of their rights and as such will demand a greater participation in the process of passing judgement on the performance of students. This does not in any way justify their reform. Thus the odds seem

to be against abolition; the trend is rather towards greater emphasis on examinations. However, in response to the recommendations of educational psychology and to the pressures created by heavy school enrolments, examinations everywhere seem to be undergoing a basic metamorphosis which mostly touches the question of their control and of their nature. It is thus expected that in the next decades, we shall witness added activity towards the improvements of examinations and the training of qualified examiners.

The abolition of external examinations has been very extensively debated in India. The Education Commission (1964-66) went on record to say:

One line of attack would be to abolish set syllabuses and the external examinations based on them altogether and to replace them by a system of internal and continuous evaluation by the teachers themselves. This is already being done in some institutions like the IITs or the Agriculture Universities and it could be increasingly extended to others as soon as the necessary facilities and conditions can be provided. We hope that, at no distant date, it will be adopted by all teaching universities and that the major universities, would give a lead in this matter. We realize, however, that external examinations will remain with us for a long time, especially in universities which have large numbers of affiliated colleges of very unequal standards. The main strategy here would be to attack the problem on two fronts: introduction of more frequent, periodical assessment so that the undue emphasis on the final examination as the sole determinant of success is reduced, and reform of evaluation techniques.

A committee of the members of the Parliament which considered the recommendations of the Education Commission (1964-66) recommended that in the matter of examination reform attention should be concentrated on three major areas: reduction of the dominance of external examination; the introduction of reforms which would make them more valid and realistic measures of educational achievement; and, the adoption of a good system of internal evaluation. The National Policy on Education 1968 laid down that a major goal of examination reform should be to improve the reliability and validity of examinations and to make evaluation a continuous progress aimed at helping the students to improve his level of achievement rather than at certifying the quality of his performance at a given moment of time. The National Policy on Education 1979 also visualizes only de-emphasizing of public examinations and not their abolition. There is no reason to believe that the next National Policy on Education will urge outright abolition of Public examinations.

Whatever may be the trend in developed countries, in India, the interaction of various scenarios and the direction of change already initiated leads one to think that in 2001 public examinations will not be abolished but will only be de-emphasized. They will possibly be metamorphosed and will be supplemented by alternative strategies which are already underway.

Metamorphosis of Examinations

The most important feature of the metamorphosis in examinations that we expect to take place by 2001 is that there will not be too many external examinations. This is something about which there has been near unanimity so much so that the National Policy on Education 1979 lays down that there should not be more than three examinations upto the end of the under-graduate stage. This can be hoped to stabilize in the coming decades.

Along with this development, the educators in India, as everywhere else, will also be deeply concerned with the diploma disease, the scourge of the certificate, the dependence of individual life-chances on certificates of school achievement. We can expect the social importance of diplomas and certificates to be reduced before drastic measures are thought of. It would be increasingly recognised that the system of selection through the education system has disastrous consequences. The Certificates will be taken to be largely adhoc and unplanned. In so far as the system does work roughly in a socially rational way, it will be taken to do so chiefly by identifying the able rather than by creating ability. So, at a later stage, we may expect recruitment for jobs to be gradually de-linked from educational examinations. The rumblings have already been heard. A committee on Examinations set up by the Central Advisory Board of Education in 1970 suggested that all the State Governments and the Government of India should agree that all recruitment to the services would be made in future on the basis of results of competitive examinations held purposewise by the appropriate authorities. The passing of a public examination or the securing of appropriate grades in that examination may be utilized as a criterion for permitting candidates to appear at such competitive examinations and no more. They also recommended that the maximum limit for recruitment to lower clerical and other similar cadres should be reduced to 19 years. The latest National Policy on Education also gives a similar direction. This could be a possible strategy for the future. The society may resort to an early entry into careers for its youth, doing as much of the selection as possible within work organizations, and transforming most of the training into incareer learning, either part-time or full time, in special educational institutions.

This metamorphosis of examinations will, however, aid and support the bureaucratization of society. The above change assumes that all middle-level and professional careers are due within large organizations. This would lead to the grip of the Big Organization on the social structure. This is a possible contradiction with which the society must reconcile which it is already doing. In India, as in most underdeveloped countries, the modern sector which employs the product of secondary schools and universities is already highly bureaucratized—a good deal more so than in the industrial countries. Typically, in Africa and Asia at least 80 to 90 per cent of university graduates who do get employment get it in the public sector, and most of rest in large corporations. Moreover, in situations of acute unemployment for graduates, genuine freedom of choice does not exist; most people are

happy to take what job they can get, and are likely to cling to the organization which offers security; job mobility is low, except for those with special skills in scarce supply.

Alongwith the partial snapping of this link between jobs and educational examinations and general decline in their role, there will be attempts to improve their measurement value. This is the area which has been receiving maximum attention in India. The National Council of Educational Research and Training has already expended most of their efforts on this task. Apart from the improvements in questions and question papers, many other procedures of external examinations will be made more systematic and scientific. The results, for example, may be declared increasingly in grades rather than in terms of numerical scores, over-all aggregation of marks and classifying students into various divisions or classes may be abolished in favour of the certification of performance in individual subjects. Some progressive boards like the Central Board of Secondary Education have already started doing so. Statistical scaling of marks with a view to controlling inter-examiner and inter-subject variability may find favour with the examining agencies. The adhocism in the determination of cut-off points and the award of grace marks may be replaced by some sound rationale. But examinations will continue being used and continue being modified by socio-economic factors.

Intercultural Cooperation in Higher Education

ETTORE GELPI

Major changes in international relationship and in productivity systems can be forecast for the end of this century and for the 21st century. Intercultural cooperation through higher education could play a major role for the understanding of these changes, but to day, in most countries, higher education does not very often interpret contemporary and emerging human needs. Frequently higher education activities towards other cultures are completely separate from main academical activities. Little research has been developed to gain a better understanding of intercultural relationships in the process of, or expected to appear in the future; also training activities for intercultural cooperation are limited.

Intercultural activities could give new confidence to students and professors, but in contrast they are today often depressed and lack perspective. Building up an international society today means the valorisation of human resources, but these are not always recognized in many countries of the world. Intercultural cooperation among higher education institutions should also make possible both research and practical activities impossible in a purely national framework. Even within single national societies, intercultural activities are also an opening for the higher education institutions oriented towards outside reality. In fact there does exist intercultural cooperation not only among different countries but within nationals of the same country; in the latter case, rigid social stratification, social discrimination, and bias against minority groups make culture communication most difficult.

Intercultural cooperation can help professors and students to overcome a purely corporatist defense of their present situation and their future profession. New societal goals at national and international level can lead to higher educational reforms related to more than the purely personal interests of the higher educational corporations. Today, higher educational reforms

seem quite irrelevant for the general public interest, because emerging societal goals seem to be unsufficiently related to these reforms, and accordingly professors and students find themselves isolated in the debate concerning these educational reforms.

Higher education international policies are becoming a part of the international "games" and the power-play relationships. The ever-increasing role of knowledge and of the transfer of technology and training affect higher educational systems, and this can mean new significance for higher education of both central and peripheral countries. But the dominating-dominated relationship could aggravate through higher education because the more powerful countries, using their resources, can provide the requisite technologies needed in the peripheral countries, or refrain from it.

An imbalanced intercultural cooperation is now developing inasmuch peripheral countries are becoming more dependent in education for: (a) hardware and software, (b) importing of professor for some special fields, (c) training of post-graduate students in universities of countries of the center, etc. Peripheral countries cannot or do not want to refuse this imbalanced intercultural cooperation (though they can sometimes profit from it) but they have to reinforce their cultural development as an armour to resist new external cultural domination. Moreover in a number of peripheral countries, higher education is growing rapidly, but with contradictory trends.

The transfer of training is becoming one of the most important aspect of intercultural cooperation. The failure of this transfer can be attributed to the selfishness of technologically advanced countries, but then, transfer itself can create a new type of imperialism. This contradiction can be overcome if the rules of the game can be unambiguously stated. Is this transfer useful for reinforcing the scientific and technological capacity of a country or, on the contrary does it aggravate dependence of the receiver country?¹ The cost for these transfers for the receiving countries is increasing significantly, but in many cases these countries and people have no choice but to accept the contents and the ways of the transfer of training which is associated with the transfers of technology.

Inequalities concerning higher education, are increasing among diverse countries: in very industrial countries, higher education development is becoming a double indicator of a new kind of consumption, and of a more democratic higher educational development in industrial countries which does not mean more international educational democracy but it can help peripheral countries; the latter have to fight indeed for a new educational order, but, this order cannot be merely quantitative. Peripheral countries have to protect themselves from dependency and from propaganda and manipulation, but, simultaneously they should make maximum profit of the scientific and technological research done in the heavily industrialized countries, because the results of human creativity and scientific research (and the emerging new industrial culture)² belong to mankind and not just to industrial countries, east or west. Analysing from an historical point of view, we can affirm that the appropriate means and significant people for

research come from the peripheral countries. We have also to remember that Egyptian priests and Greek philosophers were not the only ones to profit from slave work; even in our modern times, powerful economic and political elites are able to develop research because of exploitation of many forms within and outside their own country.

Intercultural cooperation vis-a-vis cultural identity. I do not think that the above is always a contradictory choice, because in a real sense they are compatible when intercultural cooperation does not become an instrument for domination. True, that there is much ambiguity when we speak about intercultural and multicultural cooperation. In fact, in the past as today, many old and new empires were, and are, multicultural societies; but the different ethical and cultural groups do not have always the same status: that is, these people do have an equal legal status, but in reality, not identical cultural, economic and social status.

Intercultural and multicultural policies, when they imply dependency of one given group, are becoming a threat to cultural identity. In the to-day's north-south, centre-peripheral relationship, the international division of labour and mass media dependency, and intercultural cooperation can become either an instrument for domination, or for a new equilibrium. It is a matter of verifiable fact that national and international organisations dealing with intercultural cooperation, show the working of these two contradictory factors.

Higher education is no longer more an ivory tower; on one hand, in all countries (free market or planned economy), the state and the industries jointly, or separately, are becoming increasingly interested in higher education policies; on the other hand the growing relevance of foreign relationships, especially in the economic field, also means for higher education a parallel involvement in the foreign relationship of various countries.

Is it really possible through higher education to produce a dependency among some countries? Professors, contents, teaching technology coming from outside in the peripheral countries can strengthen dependency; at the same time, the opening out of higher education in the culturally advanced countries, to foreign students with very little regard for their own culture also means a new form of domination. Sometimes higher education professors and students with enforced dependency in peripheral countries can find easy enough excuses to accept violations of (a) the relevance of their research and training for their own country, and (b) the intellectual freedom and creativity. A dependent higher education leads to the formation of a future dependent leading class in the peripheral countries, as well as most adaptable talented manpower from the peripheral country coming to industrial countries.

How is it possible, then, to reach a new equilibrium through intercultural cooperation in higher education? First: by a negotiated cooperation on a regional basis among higher education institutions which can strengthen the capacities of higher education among those countries whose dimension does not allow a comprehensive higher education system. Secondly: more access

to migrant culture in higher education implies a new understanding of these external cultures, which is also beneficial for the future leaders of hosting societies. Thirdly: cooperation among national and foreign professors helps the students to become more aware of different cultures. Fourthly: student's curriculum should also be revised to enable foreign students to keep in touch with their own culture through higher education learning.

From moral declarations to practical activities. How is it possible to convince the most powerful countries to take practical steps in place only of statements of goodwill concerning intercultural cooperation? Why does higher education in economically and military powerful countries, have to be in variance to their general policy towards peripheral countries, when actually, their mutual interests seem to be conflicting? If, in a short run, the powerful countries, east and west, can develop themselves more through further exploitation and violence in the third world, then in a required broader perspective, they must think in terms of a more equal cooperation among these different countries and discover new ways of mutual understanding. Positive relationships between cultures and people, cannot be a purely moral option, because the people are developing through political struggle and their mutual economic interests.

On one side, ideal reasons are propounded to convince one of the utility of intercultural cooperation within higher education, but on the other side, the changing patterns of productivity—full of momentous consequences for education—will make necessary this intercultural cooperation in higher education because, increasingly, production and commerce are becoming international. It is becoming difficult for producers and businessmen to avoid being concerned, informed, and aware of the outside cultures, because, markets are becoming world-markets, and, education with culture plays a role in worldwide economic dynamics. This necessity is possibly the real starting point for more relevant intercultural programmes in the institutions of higher education.

Juridical and economic aspects: intercultural activities in higher education have to be studied carefully because participation of foreign people in the national system of education creates problems and encounters obstacles. It seems, today, that it is feasible except in education, to work in most of the productive sectors of other countries, at least in countries with positive international relationships. Higher education administration, much more than the productive system, has much trouble in accommodating people from abroad; because evaluation procedures are less efficient and, with very few exceptions, keep out people not belonging to the national system.

There is not just formal higher education, but also non-formal education even if the latter is not well known by the people. In fact intercultural cooperation is developed sometimes through non-formal higher education—foundations, business-schools, social events, military powers, apparatus of political parties. The dependency inherent in social class stratification, in economic groups, in north-south countries, is often the norm of this cooperation. We do need research in this delicate sector to find out the subtle

ways that make dependent the leading classes of many peripheral countries. The international division of labour, and the currency policies that are affecting the labour market of the third world, and of industrial countries, are also transforming nations, classes, and social groups; new class cultures are cutting across the traditional upper, middle and working class cultures.

There also exists a non-formal higher education of people who do not have access to formal higher education but, who are quite capable through individual and collective self-learning of acquiring skills and sophisticated cultures.

The limited concern of higher education institutions for popular culture and education, makes quite difficult an understanding of non-formal expressions of education, and the culture of other countries, as also of low status social groups. The knowledge of different non-formal expressions can lead to an understanding of the different ways of communication: oral, visual, non-verbal, but, this understanding is indeed poor in many academic circles. The oral traditions are often ignored in the intercultural relationship between countries.³

What does intercultural cooperation in education and, specifically, in higher education, signify for new marginal people in industrial countries and for the great majority of people in the peripheral countries? How is it possible to get the people involved (migrant workers, refugees, minority groups, most unprivileged people of the various countries, etc.)⁴ to participate in the preparation and the definition of policies and programmes belonging to intercultural cooperation? The first evaluation of today's intercultural activities in higher education appears to indicate that, for the present, these people do not have any outlet and chance to contribute to higher education policies among them very few are pure consumers of higher education.

The mass media, as well as the communication infrastructures, do not make easy to understand original thought and to detect thinkers of peripheral countries where often the creative ones among the people are productive but this creativity does not reach the mass media or even the official circles in the capitals of their own countries.

Mass media and documentation centres and libraries in universities collect documents, produced and distributed in the usual way; this means that alternative and critical cultural productive work does not reach the media and libraries. Intercultural cooperation needs a most vigorous action of mass media men, documentalists and librarians, to collect as much as possible informations using every possible means—oral registration, translations of documents written in local languages, collection of documents other than traditional written one, stimulation of contributions from countries considered marginal as far as written production is concerned, etc.

If education is becoming more oriented towards production, research and creativity, it will be easier for the responsible people in education to inter-communicate production and research perhaps have a more comprehensive language because they both deal with similar problems. Two major perspectives of education are often neglected in higher education: creative

production of knowledge and a "new understanding of the reciprocal relationship between different age spans and age groups leading to a new participatory behaviour".⁵ The achievement of these two functions can contribute to intercultural cooperation: prejudices, racism, intellectual dominance, etc. are often associated with a purely passive cultural attitude. It is to be assumed that present-day problems connected with intercultural cooperation (migrants, refugees, employment, racism, etc.) are those of young and adult people facing a changing and a complex world, and these precisely can be one of the goals of higher education.

The acquisition of knowledge would then become the most appropriate productive activity for many countries on their way towards an industrial and a post-industrial society. In the meantime, higher education, in principle one of the pivots for the achievement of knowledge, faces a crisis over the world. Is the acquisition of knowledge moving away from the higher education institutions? This question has to be taken up seriously. The monopoly of the development of knowledge in higher education and research institutions is nonsense, but these institutions have an even more important role to play that they play today.

New curricula for higher education are needed to deal with subjects like the management of national and international society in a forecasted unified world;⁶ ecology, concerning conditions of sky, water, earth; international migration; and the internationalization of economic and financial markets. The management of international society: production and finance are becoming international but civilian national and international institutions are too weak to cope with this internationalization of production and economy. Few studies are made, because few institutions or States think themselves directly concerned.

Ecology concerning sky, water, earth: solutions to many of these problems cannot be found only at the national level. Existing international organizations have tried to develop research and to give some guidelines concerning these problems, but we can ask who is to implement through international and intercultural cooperation, the above policies in these very fields?

Migrations: international and regional migrations are not being new but the dimensions today are greater. Migrant workers are often poorly assisted at the regional level, and often at the national level, they have no kind of assistance and protection. Technologies and money are moving across one country to another, but usually no control exists in the peripheral countries, so that sometimes these transfers, instead of being instruments for development, become instruments of destabilization.

International cultural relationships, and life, are full of moral and good-will platitudes but little research exists to support political decisions whenever these decisions are made. In this sense, higher education has a role, enriching the knowledge that is needed to build up new effective instruments for international and intercultural relationship.

How are these problems studied? New curricula are needed, but equally, the traditional ones have to be rethought. All programmes and contents have to be redirected in a wider international intercultural perspective, but, universities and higher education institutions in general should not limit themselves building up special departments for the international and intercultural relationship. First of all, because these departments alone could give the impression that they are taking care of the intercultural cooperation, thus, there is no more need for other higher education departments to be concerned; secondly because often these departments, when they are too separate, can become a most obvious instrument for external relationship among the different ministers for foreign affairs, not to speak of the cases of foreign secret services.

If higher education is becoming more important in international relationship, which is partly true, it is evident that the most powerful countries will have a special concern and specific policies, for their higher education institutions as well as for similar institutions of other countries. However, to manipulate just one department is easier than to manipulate the entire higher education system.

Intercultural cooperation in higher education is ambiguous, contradictory, repressive, nevertheless it is full of promise. It is a very difficult task to work through international cooperation: frequently the correspondents in the other countries are not the best-chosen people. If higher education institutions and professors are not keen they can become culpable of extremely negative operations in countries they do not even know properly. If they easily accept intercultural exchanges without possessing all the vital informations concerning the cultural activities of their correspondents, they wrongly select people who are working in the cultural domain with ends and aims just the opposite of their own.

International academic networks are organized in such a way that some countries, with or without any scientific primacy, are leading in a given field. Top people in peripheral countries are therefore obliged, and, in some cases even "chose" to accept external international leadership. Scientific achievements in some countries, or the gaps between countries in the field of science and technology exist; it is pure demagoguery to ignore them; but, the creation of dependent networks is purely political, which sometimes constitutes academic violence.

A main obstacle to intercultural development in higher education is the ignorance itself of the most "cultivated people". Professors, very competent in their subjects, sometimes ignore international realities and cultures not local nor national. Racism (open, hidden or unconscious; the latter one is the most wide-spread); rigidities of educational structures that make for difficulties in accommodating people coming from other countries and other educational systems; a declining mobility even within the national higher education systems (more and more professors graduate from the same universities where they will later teach)—these are at the origin of this top-level ignorance.

The poor intercultural cooperation among formal higher institutions is an indicator of the cultural poverty of these institutions; technological and scientific achievements cannot alone represent a full cultural development.

Modern cultural cooperation can profit from a broader and universal historical knowledge of different societies. Wealthy countries usually know little enough about the historical traditions of more peripheral countries. It would seem, that wealth implies historical research and the application of these findings concerning both wealthy countries, and, vice-versa. If we want equal and democratic intercultural cooperation, it is necessary to foster historical research at international levels; it is not possible to forecast creative intercultural cooperation without first a respect for cultural identity on an equal basis.

Intercultural research and production needs time, but the higher education timetables in many countries still consider these activities more or less marginal and even as a leisure-time work for summer vacations. But, if we believe that the intercultural dimension is emerging as one of the condition for the survival of higher education, then, we have to put inter-cultural activities among the priorities of higher educational programmes.

Concrete projects concerning individual and collective human rights, strategies for peace, development, etc. cannot be merely an episode for higher education institutions; on the contrary, they are among the most relevant activities of their programmes, and, a starting point for higher education research and training activities.

As far as practical structural solutions are concerned, it is possible to envisage (a) intercultural teaching units in universities at regional and international level where national and foreign professors can contribute to the international curriculum;⁷ (b) common schemes of evaluation to allow easy transfer of students and professors from one institution to another within the region and at international level; (c) formal and non-formal training for professors and students and self-learning to become acquainted with historical contemporary and future realities of different societies; (d) more collective self-management (if professors are awaiting new directions from higher channels, it will be difficult to meet the demands emerging for intercultural cooperation).

A concrete example of higher education cooperation is to find an alternative to the arms race. To develop intercultural cooperation means, in a sense, fighting the arms race and this includes all countries, east and west. This is not enough, but a better understanding among people can contribute to strengthening people struggling to convert a war-prone society into a peaceful society. These proposals, made for trade-unionists, can also be directed towards higher education institutions⁸:

“First, to discover the technical practicalities of converting arms-production into the production of useful goods for non-military purposes, and to identify such socially useful alternatives for existing production facilities.

Second, to identify social needs in developed countries and similar development needs in underdeveloped countries to which converted arms industries could be applied.

Third, to examine ways of financing, through central and local government and in other ways, a major increase in non-military production that would be acceptable to the great majority of people to the same extent that defence budgets are now acceptable.

Fourth, to prepare teaching materials on this subject, including plans and case studies, that could be used in many different forms of adult education, where the question of arms-conversion could properly be raised.....''

Intercultural cooperation at international level in higher education in itself reflects the tendencies of higher education. Higher education, open to different potential participants and to all age kinds of talents, on a local and national level, creates a positive environment for intercultural cooperation. A higher education, lifelong oriented, cannot be but unsatisfied of purely narrow education related only to an age, to one given social class, or to the line of only one party, or again to a pure national framework, antagonistic to international cooperation. Intercultural cooperation cannot be but dialectic, and inventive, free of artificial barriers and dogmas.

A critical analysis of international cooperation in higher education is urgently needed. As a matter of fact, on one side there is a lack of this necessary cooperation, on the other side, there is a pollution of false intercultural activities, which hide racism, irrelevant culture, new colonial manipulation, separation of the elite from the people, the arbitrary selection of only one part of the culture (i.e. incorrect interpretation of folklore), brain-drain, etc. Also, a critical analysis of higher education futurology is also useful because today's higher education futurology is often unidimensional; demography and scientific development are taken in consideration but not the emerging problems of mankind and the interrelationship between countries.

In this paper it has been said that education is bound to be strongly affected by the changing patterns of the world of work as well as by the new relationship that will emerge between "northern" and "southern" countries. These problems will become central for university professors and students, if higher education remains central in the future cultural life.

A working dialogue should now begin between progressive, scientifically oriented and creative people of various higher education institutions all over the world. Censorship, conformism, manipulation through ideology, intellectual conformism are the worst enemies of intercultural cooperation.

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The Role of Humanities and Social Sciences in Engineering Education*

S. AMBIRAJAN

In this age of galloping specialisation, it is clearly a wise move to step back a little and make an attempt to see the whole in proper perspective. What we observe now in our academies is a far cry from what prevailed even two or three centuries ago, when there were either Natural philosophers who studied the outside physical phenomena or Moral philosophers whose agenda comprised the social fabric and the inner worlds of Man. Technology as a separate branch of learning is very much a recent phenomenon, because it never found a place in the two-fold classification of knowledge. The word itself was first used in 1615 and meant a systematic treatment of the arts, though it acquired prominence only after the Industrial Revolution that occurred in Western Europe in the eighteenth and nineteenth centuries.

Here one must make a clear distinction between feats of engineering and those of technology. Innovations have indeed been made in the use of tools ever since Man realised he had the capacity to do so. There have been feats of engineering long before technology made its appearance. The Pyramids, the great medieval cathedrals, the magnificent temples and mosques, the great dams built across rivers in the ancient and medieval period, the overpowering fortifications, the Great Wall of China, the Qutab Minar, the Pisan Leaning Tower etc. are examples of grand marvels of engineering made to order, by men with skills developed individually over a life-time. But technology is different, as Harvey Brooks, Professor of Technology and Public Policy at the Harvard University, elucidates:

Technology is essentially a specifiable and reproducible way of doing things. It is not hardware but knowledge, including the knowledge not only of how to fabricate hardware to predetermined specifications and

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functions, but also of how to design administrative processes and organisations to carry out specified functions, and to influence human behaviour towards specified ends.¹

What modern technology does is to escalate productive capacity and this escalation takes place cumulatively with the passage of time.

There is hardly any doubt that technological change has been an important determinant of the structure and transformation of the modern world economy. It has enabled more and more goods, and in ever larger quantities, to be produced. So phenomenal is the productive power that has been unleashed that the Harvard economic historian, David Landes, compares it to the formidable Titan, Prometheus, being unbound at last. More and more, and faster and faster, man is freed from various kinds of routine labour and repetitive tasks. To talk of the impact of technology on the modern world is almost like talking about the pervasiveness of the atmosphere. It is there for all to observe, inasmuch as it has become part of our everyday life from birth to death. There is thus no need to question the general currency of technology in modern times. Statisticians of course have tried to quantify the exact part played by technological change in the amazing growth of the world economy. Edward Denison, for example, studying the contribution of technological progress to the development of American economy between 1929 and 1957, has concluded that technological progress (meaning all sources of growth except changes in man-hours, land and labour) contributed seven-tenths of the total growth.² It would seem, on the other hand, that we have not yet seen the end of technological progress. Thus the futurologist, Mr. Alvin Toffler, assures us that "We are children of the next transformation, the Third Wave"³ following the first wave of change brought about by settled agriculture, and the second wave created by the Industrial Revolution. He also goes on to create a mind-boggling scenario of how further technological change is going to alter the shape, texture and temper of our economy.

Social scientists have always noted this singular phenomenon with appreciation, anxiety and apprehension. From Adam Smith's analysis of the Pin-factory in his *The Wealth of Nations* to the current concern with the economists have tried to investigate various aspects of technology. On the whole, the community of economists, past and present, have welcomed 'technology' as a Knight in shining armour who makes assault after assault on the crumbling fortress of scarcity. Not that there have been no misgivings. Even Adam Smith, along with the encomiums he gave to 'Division of Labour' for increasing productivity, charged it with splitting the human personality and making man "as stupid and ignorant as it is possible for a human creature to become". Modern students of the economics of technology like Edwin Mansfield, who ceaselessly champion the cause of technology, are nevertheless forced to admit that there is also a darker side to technological change and that the benefits of technology are not secured without costs. Even so, they all conclude that "on balance" the benefits of technology far outweigh

such costs, and indeed they argue that we need more and more of technology. The failure of social scientists to notice for quite a long time the darker side of technological progress can have only one explanation, that is the immediate achievements of technology have blinded its proponents to the harsher realities. As John Bryant has pointed out recently: "Technology, I think, is a sort of Newtonian mechanics writ large—its successes are so obvious that its failures, however crucial, go unnoticed."⁴

The technological changes that we have witnessed and the promised bonuses should have already ushered on a global scale an era of plenty and prosperity. But something has surely gone wrong somewhere, for while even within the affluent countries technology has not been able to banish poverty, in the poorer 'Third World' regions poverty reigns as a multi-dimensional evil. A single example should be sufficient to show how the mere injection of the latest technology is no solution to problems that involve the entire human-physical environment. The Des Pilot Irrigation project in Iran has a full range of modern control structures, organisations, and "all other accoutrements of a large modern system". Yet, after six years of operation, the average water-use efficiency is between 11% to 15%, whereas the nearby traditional system with minimum physical control structures registers a 25% use!^{4a} Not only can modern technology be thus inefficient, in many respects it seems also to have created intractable problems heaping further misery on the already suffering population. It is no doubt broadly true that technology has power to create more wealth than before. But the surplus so produced does not get distributed evenly for the benefit of mankind. Some countries seem to enjoy a major share of the benefits. Even within the same country, only some sections are plucky enough to benefit by technology. Besides, the surplus is frittered away in useless or perverse pursuits such as arms accumulations, grandiose unproductive schemes like Olympic Stadia, assorted Silver, Golden, Platinum Jubilee celebrations of trivial things and institutions, and the production of luxury goods for the elect.

Science and Technology are not neutral as between individuals, classes and Nations. Actually they widen the distance between the Haves (both in terms of economic and military) and the Have-nots. Technology is a powerful tool mainly in the hands of those who manage and manipulate it in order to exploit or dominate others. Professor Daniel Headrick has shown how new technology in the shape of gun-boats, novel tools of war, and quinine provided the means for a few European nations to spread their imperialist hegemony over large parts of Africa and Asia.⁵ Ms. Lucille Brockway has drawn our attention to how developments in the science of botany were used for economic penetration of colonies in the nineteenth century.⁶ Sensitive and percipient observers were struck by the contradiction inherent in the promise of technology and its actual results. Thus Karl Marx:

In our days everything seems pregnant with its contrary. Machinery, gifted with the wonderful power of shortening and fructifying human labour, we behold starving and overworking it. The new-fangled sources

of wealth, by some strange weird spell, are turned into sources of want. The victories of art seem to be bought by the loss of character. At the same pace that mankind masters nature, man seems to become enslaved to other men or to his own infamy... This antagonism between modern industry and science on the one hand, modern misery and dissolution on the other hand; this antagonism between the productive powers and the social relations of our epoch is a fact, palpable, overwhelming, and not to be controverted.⁷

Whether technology succeeds in bringing affluence or not, it has had the effect of transforming the social fabric of human habitations—excepting for those living in remote and inaccessible jungles—all over the earth. Although all technology induces changes in every aspect of human life, while traditional technology (i.e. the development of human skills) was slow and society had ample time and leeway to withstand shocks and recoup itself without any serious disruptive imbalance, modern technology is rapid and its speed of growth is exponential.⁸ The system is subjected to repeated shocks even before it comes to terms with the earlier ones.⁹ This continuity and permanence of confusion as a result of unending technological change results in human alienation and even in the general desecration of everything man holds dear.

Viewing all this and as usual with his prescience, Marx prophesied: "Some parties may wail over it; others may wish to get rid of modern arts, in order to get rid of modern conflicts..." Sure enough in the nineteen sixties and seventies, a number of thinkers began doing so! Jacques Ellul, Theodore Roszak, Lewis Mumford, Herbert Marcuse, E.F. Schumacher and a host of others have in recent times severely warned humanity against placing too much faith in technology. They argue that technology has its own momentum, and once started it cannot easily be restrained or directed to suit our conveniences under the existing human condition. Technology for these thinkers is basically anti-human, and it is thus inevitable that it must destroy its own creator, that is Man. Establishment and pro-technology scientists too have echoed these sentiments. For example, Jerome Wiesner (President of Massachusetts Institute of Technology) has declared: More (technological) power has not made us wiser or more considerate". And Philip Handler (President of the U.S. National Academy of Sciences) wonders whether we have not "in the course of technological progress...sacrificed some significant element of intrinsic humanity". These critics point out that the problem of technology is not only what it does to the human environment and personality, but also its capacity to foster illusions like the assumption that technology has the only potential for human well being or that it can set right any problem whatsoever created by itself.

While the European-American intellectuals have not abandoned what Shigeru Kimura of the *Asahi Shimbun* characterises as the "antiscience disease", the scientist-intellectual-bureaucrat-aid-giver-politician nexus is busy pushing technology down the throats of under developed countries.

In societies where Science and Technology is a recent phenomenon, it is virtually impossible to get across the idea that they may not be an unmixed blessing. As Ashis Nandy points out:

Societies resist being taught: they prefer to learn on their own. It is improbable that the Western experience will deter us from further mechanising man and investing the machine with greater charisma. The West's illnesses created by the machine are too distant, its gains from technology, measured in terms of power and wealth, too obvious. Our suffering due to dependence and poverty, on the other hand, seem real and immediate, and the dangers posed by modern technology in the Third World seem abstract and hypothetical.¹⁰

Technology—despite its destructive potential—has too many vociferous supporters as yet, and it is not yet seen in its malignant aspect. We have read of the rebottling of the released genie with a clever stratagem, but modern Man however has to learn to live with technology, contain it to the extent possible, and hopefully make use of its positive virtues. If technology is to serve and not destroy mankind, it is necessary to mobilize head and heart together and tackle this headless and heartless incubus.

Reality is a complex of several dimensions, but technologists are apt to think in terms of a unidimensional objectives. The value system of technology is 'efficiency' which always asks: How to produce a thing faster and in great abundance? The technologist is so apt to get dazzled by his brilliance that he really believes that a Golden Age of prosperity is being ushered in. When a question is asked, he takes for granted that there is a definite answer to it; and all that has to be done, in his view, is to overcome a series of constraints. When asked about the age old problem of poverty, the solutions come pat to the typical scientist/technologist. I shall cite one example. According to Professor Gerard O'Neill of the Princeton University, the problem will simply not exist because, in a hundred years from now, we will all live in a bright Brave New World. Sure, there will be some armaments and conflict, but with advances in the technology of computers, automation, energy supply, communication and colonization of space in huge orbiting stations equipped with and earth-like atmosphere (plants, insects, animals and all), man will lead a happy existence!¹¹ There is hardly a whisper about the plausibility and acceptability in terms of sociological, environmental, political or economic terms. It would seem that the ultimate aim of the technologists' ethos is to eliminate the Human element in our organisations as far as possible. The word "Fully Automatic" has acquired a sort of divine aura in the mind of the engineer and errors (even disasters), according to him, occur not because of technology but because of the human agency involved in it. We are, for example, told by Mark Stephens, a specialist in the Carter Administration investigating the accident at the Three Mile Island Nuclear Reactor, that "If the operators had taken a nap at four a.m. on 28th March 1979 and let the automatic system work, the accident would have been far less severe".

And Professor Norman Rasmussen of the Nuclear Engineering Department at the Massachusetts Institute of Technology agrees: "If the operators had kept their hands off the machine, Three Miles Island would not have been a serious accident".¹²

It is said that Soren Kierkegaard the Existentialist philosopher remarked, after assimilating Hegel's monumental philosophical labours, that Hegel had done everything but tell how an individual should actually live his life. The predicament is not different with our practitioners of science and technology. Exploiting the physical phenomena around us, they have given us so much and promise to give so much more, but without at the same time telling us what to do with it all. They seem to think that it is their business only to unleash the hidden potentialities of nature, but not to worry about controlling the consequences. However, "Can technology be controlled?" is not a question we should answer in the negative. Even those scientists like the Nobel Laureate, David Baltimore, who vehemently oppose any kind of limits to scientific enquiry in the area of basic sciences say that "As we go from the fundamental to the applied, my arguments fall away. There is every reason why technology should and must serve specific needs. Conversely, there are many technological possibilities that ought to be restrained".¹³ Technology has to be controlled effectively, but how? Obviously technology itself cannot tell us how to control technology. The science of cybernetics tells us that systems can be mastered and steered only from positions which themselves are not dependent on those systems. So we must seek answers to the basic problem of what we want to do with technology from outside the domain of technology. As Prof. Dr. Hans Sachsse has said recently:

We can only control the cycle of technological progress and consumption, of achievement and use if we succeed in emerging from the circle, if we discover aims in life and values anew which lie completely outside what can be realised technologically and are fully independent of the technological mastering of life.¹⁴

Discovery of aims in life and values, I venture to submit, can be made only and only if, we learn from the past and rediscover the lost traditions and wisdom of our ancient people.

It is doubtful whether we will be able to alter the perceptions of the present day leaders of technology. Unfortunately, technologists in power and positions of influence who are over forty had, during their formative years, imbibed the ethos of technical superiority. As we have seen, it was not until the sixties that some doubts were raised as to the dangers of the excessive reliance on science and technology as a cure for our problems, but by then the minds of our leaders in their forties and above had been made up. Thus Humanity's hope lies in the future generations of Scientific/Technological leaders who, it is hoped, will not have the same blind faith in science and technology as the present generation has. This makes their education of vital importance.

I earnestly believe that we should be interested, not merely in training technicians to be the future industrial "cannon fodder", but engineers with a full personality capable of reaching the highest pinnacle of the profession wielding much power and influence. Whether we approve of it or not, increasingly power to alter our societies is going to be vested in the hands of scientists and technologists. Already we see scientists like Homi, Sethna, M.G.K. Menon, Varadarajan and Raja Ramanna occupying key positions in the corridors of power, and this trend is likely to accelerate rather than otherwise. So our students of to-day will inevitably become our Masters or Guardians tomorrow. Seen from this perspective, their education assumes crucial importance because, as Socrates remarks in Plato's Republic: "the direction in which education starts a man, will determine his future life".

The question, then arises: What sort of engineering education our future Engineer/Guardian needs? He must know his 'engineering' of course, but will that alone make him a good Guardian as well? Let us go back to Socrates:

There is the knowledge of the Carpenter; but is that the sort of knowledge which gives a city the title of wise and good in counsel? Certainly not; that would only give a city the reputation of skill in Carpentering.....

(But the true Guardian must) unite in himself philosophy and spirit and swiftness and strength ... (he must be) gentle and moderate.¹⁵

Lest we be accused of antiquarianism, we shall balance Socrates by citing the credentials prescribed for the engineer of 2000 A.D. by Professor Jay Forrester:

The kind of men most needed can harness the resources of the country and the world for results most beneficial to society. Such men couple science, economics and human organisations. They act as the interface between compartments of human endeavour. They must resynthesize the fragments caused by the specialisation of other men...Such a man is action oriented but with the patience to plan and prepare for long range goals...He is a man with the sensitivity to see the need and with the judgement to plan and accomplish a solution.¹⁶

These requirements stem from the fact that technology is not simply a collection of machines and buildings, however complex, but a "system whose social, cultural, intellectual, managerial and political components are seen as integral to it".¹⁷ It is not enough for this engineer/guardian to be able to manipulate the artifacts, but he must also be willing and capable to manage the entire system. Thus engineering education, besides its particular technical, specialist studies, has to cover a wide variety of areas, especially in the Humanities and Social Sciences.

It is not easy, however, to persuade engineering educators that a substantial input of Humanities and Social Sciences is required in technological education because of what Professor James A. Kent characterises as the persistence "among most engineering faculty of a general ennui"¹⁸ regarding these subjects. In India, there is a positive antipathy to teaching any subject other than engineering, and according to our engineering educators, it is not their business to teach Humanities and Social Sciences because students come to engineering colleges and institutes to learn engineering and not something else. The continued and tenacious prevalence of this engineering-colleges-should-teach-only-engineering syndrome in India is largely due to historical reasons. When our engineering schools were established about ninety to hundred years ago, the British masters were mainly interested in churning out subordinate staff like overseers and draughtsmen. They were given basic engineering skills to the exclusion of other kinds of organisational or administrative training. It was basically a clever ploy to get cheap but efficient technical labour without any danger of revolt from them.¹⁹ This exclusion of anything other than engineering in the engineering curriculum has continued without revision, and this old-world exclusion is now treated as a superior virtue. There can be no doubt that we have to wipe out this colonial hangover.

In technologically advanced countries, engineering education is no longer considered autonomous. It is realised that people may want to study engineering as much to get a knowledge/appreciation about the complex Industrial/Technological world as eventually become a specialist engineering in a particular area. This has resulted in leading technological institutions giving different kinds of engineering degrees to suit varied individual requirements rather than one stereotyped or undifferentiated diploma. For example, the Massachusetts Institute of Technology has three streams in its Mechanical Engineering Department. One stream provides for those whose interest is in becoming practical mechanical engineers. The second is aimed at those who will study further and go on to the Masterate and Doctorate Programmes. And a third stream caters to those "for whom the undergraduate programme will provide a broad base—a base of intellectual style as well as intellectual content—for further professional study directed towards medicine, law, business or industrial management".²⁰ Even among those who enter the first two streams, a variety of other differentiations should be possible. Thus according to two M.I.T. Engineers, Professors Robert C. Seamans, Jr. and Kent F. Hansen (Dean and Associate Dean of M.I.T. School of Engineering respectively), there should be five categories of engineering graduates with well-tailored curricula: engineering scientist, practising engineer-entrepreneurial engineer, systems engineer and management engineer.²¹

A common features of these restructured curricula is the induction of a higher percentage of courses in Humanities and Social Sciences. Even in India, it was precisely for breaking out of the colonial ethos in engineering education that the Indian Institutes of Technology were established, and the Sarkar Committee which visualised these emphasized the importance of engineering students studying Humanities and Social Sciences. Even so,

while the Social Sciences are just tolerated because they seem to be more 'relevant' and less decorative and not too remote to engineering concerns, the Humanities remain suspect and cause allergies. Among social sciences again, the preferred branches are Economics and Management, because of their tell-tale operational usefulness. In fact, a UNESCO survey has revealed that Economics is the most widely taught social sciences in engineering and technological institutions.²²

Is this satisfactory? We must not answer this in the affirmative because there are two aspects to economics, the first being the mechanical, dealing with allocational and optimisation problems, whereas the second has a broader orientation, concerning itself with explaining economic phenomena as they affect all sectors of our life and seeing things in a historical and sociological perspective. What is popular among engineering circles is only the first of these two. It seems, then, that the sort of economics that is taught has rather more affinity to engineering in the sense that it deals with things in a mechanical way and solves the technical problems of allocation, whereas the aim of teaching Humanities and Social Sciences is something totally different. As the influential Olmstead Report said, the engineering student must "combine with his technical competence a sense of human values and knowledge of social process."²³ Such advice has not fallen on deaf ears, as we can see in the practice followed in the enlightened institutes abroad. At the University of New South Wales, Australia, where I spent more than fifteen years before coming here, there is a large Department of General Studies to broaden the mental base of the students. This Department was established when that University was originally a mere Institute of Technology imparting technical instruction. In the United States of America, where are situated perhaps the most advanced Institutes of technological studies, there has been a sharp realisation of the needs of Humanities and Social Sciences in their basic curriculum. To give a few instances:

Caltech	108+	out of 506 Units/points
M.I.T.	72+	out of 360 -do-
Texas A&N	23+	to 29+ out of 137—143 units
SUNY	21+	to 24+ out of 128 Units.

At present Humanities and Social Sciences intersperse with and interpenetrate the technological throughout the four or five years of study. A recent suggestion that is being considered is to allow students to pursue full time their science and technology courses in the first three years, and once they "become satiated with technology and also have matured in their appreciation of the relevance of the social sciences., they could devote their entire last year to the Humanities."²⁴

As against these international developments, a large number of technological educators in India make the implicit assumption that students will acquire this "sense of human values and knowledge of social processes" either at home or somewhere else. It is my contention that this is no more than a fond hope, not ordinarily realisable in practice. The students start

specialising in science subjects as they leave the tenth standard, which means that we cannot expect them to arrive at the Institute fully equipped to tackle the sort of moral and human questions that they will face in their adulthood. Our students come from a variety of backgrounds, and a few have the good fortune of coming from strongly anchored cultured homes. Students from an ever larger and wider cross section of our society come to our Institute today than found their way to Institutions of Higher learning like Universities a generation ago. Considerable numbers of students have entered our portals from either economically or culturally weak backgrounds. If our Institutes of Technology were like the Universities and had large departments of Humanities and Social Sciences specialising in those subjects, one could expect, under normal conditions, a certain measure of informal interaction and cross-fertilisation of ideas in an atmosphere charged with a variety of preoccupations and opinions. But ours are specialised Institutes with giant engineering departments and moderately large science departments, while Humanities and Social Sciences are but half a department with less than a dozen faculty members and hardly any undergraduate students. It would be futile to expect our engineering students to get any sort of humanising influence informally. It therefore becomes imperative that we induct our students formally into certain humanistic modes of enquiry.

What is the specific rationale behind this advocacy of including a sizeable Humanities and Social Sciences content in technological education? The answer to this question is imbedded in the very definition cited earlier. Apart from a knowledge of fabricating the hardware, the technologist is involved in:

- (1) Designing administrative processes and organisation to carry out specified functions;
- (2) Influencing human behaviour towards specified ends; and
- (3) As it is inevitable that the engineer will also be a guardian, defining and elucidating the ends and means.

In all these, the two crucial attainments needed are "understanding and communication", and this is where the humanities and social sciences enter the picture.

It is not necessary to labour the point that we are living in a fast-changing world, and that our present students, by the time they reach the average age of the present day professors, will be in the twenty-first century holding responsible positions and facing problems that we can't even dream about now. Science, technology, economy and the polity are undergoing such a rapid transformation that instruction in only the technical knowledge of the 1980s will not prepare our students to face the manifold challenges lying ahead. Even in the world of technology, entirely new areas not known to us now can spring up leaving our alumni desperately to struggle with them. But my concern is how are our students going to cope with basic moral

and human issues arising out of the emerging entirely novel situations and circumstances. In these days of cryogenics, Nuclear fission, test-tube babies and recombinant DNA research, the moral and technical subtleties of decisions that we encounter are enormous. Questions such as those posed by Robert L. Sinsheimer: "Can circumstances change so as to devalue the net worth of new knowledge? Might a pause or slowdown for consolidation and reflection then be more in order? Indeed, could it be that some knowledge could, at this time, be positively malign?"²⁵ are certain to be posed more often in the future. With increasing complexities all around, our students will have to make difficult decisions, and right choices will not be easy in conditions of enlarging moral entropy.

We, the teachers, cannot anticipate all the problems that may arise in the future and give easy solutions for later ready utilisation. We must therefore prepare our students to face the tough problems they are likely to face in the uncertain future, and not abdicate our responsibility leaving it to the politician or the Big Leader or the omniscient computer to solve them. Yet modern technological training is imparted in such a way that abdication of such overall responsibility is inbuilt. As Joseph Weizenbaum, Professor of Electrical Engineering at M.I.T. put it, physicians don't simply go ahead and amputate a finger for instance simply because an individual approaches them for this purpose offering them adequate recompense, *without looking into the necessity of that action for the entire body system*. However technologists do not see the problems this way.

In engineering practice, in technology, the technologist is asked to build a bridge across this river, to build a building, and so tall. The technologist then asks whether the task is feasible: for example, is the ground on which the building is to be built sufficiently stable; are there conflicting regulations? If no such difficulties exist, he says, 'Very well, I will build you that building'. It is not asked: is this a good thing for society? What is the problem? Why does that building need to be built?²⁶

While Professor Weizenbaum's characterisation of medical practice is unduly simplistic, nevertheless the comparison has a large measure of truth. When enlightened engineering educators say that the Humanities give the student "a sense of human life" (Olmstead Report), or that they "develop values, provide insights, develop an awareness of self and the world—to bring forth the questioning human" (James Kent), they mean that the student will be able to see the whole arc of existence as—albeit subjectively—a coherent form and also experience a particular feeling which is absent when he is dealing with abstract models as he often does in his professional courses. The experience of the distinguished physician Dr. John H. Knowles, illustrates this clearly:

Speaking as a physician, going through four years of medical school and six years of working with old people, watching them die . . . I finally

read Simone de Beauvoir's book *The Coming of Age*, and as physician I learnt more about aging and how to take care of the aged through the book than anything I read in medical school.²⁷

It becomes thus clear how much an intuitive understanding of the intricate interrelationships enables individuals to cope with this rapidly changing world. The relationships of the elements of human existence are many and variegated, as the following chart shows:²⁸

Man in relation to	the Divine and Sacred the Cosmos and Nature	
Man in relation to	Knowledge	(notions of life, Justice, intellect, expedience and virtue)
Man in relation to	Society Institutions Neighbours	
Man in relation to	Himself	— in relation to time and history —action versus contemplation --alienation

Many problems that arise out of this complex web of relationship are not amenable to understanding through mere abstract models much less solve them by technology. A simplification of these consanguinities may enable us to understand the structure and form, but not the spirit and feeling. But what cannot be quantified and measured and what cannot be understood through rational enquiry are ignored by scientists (including a section of social scientists) and technologists. Gerald Holton, the Harvard physicist, gives one reason for this:

.....in their own psychobiographical development, there comes a point in their late latency period, probably, in which they decided that their strength lies in not attending to the difficult, unsolvable, complex problems of human life, but to be terribly good at differential equations, data, and all the rest.²⁹

The three major disciplines that comprise the Humanities are History, Philosophy and Literature, and each deals with experience, complexity, ambiguity and the values that Man on earth has faced, and is now facing, and will have to face in the future as well. They give him some understanding of who he is individually and what his roots are. They would inform him

about the meaning of life and an awareness of his place in society and time. In short a study—however small—of these will give him:

- (a) a wide spread of knowledge;
- (b) a lively imagination;
- (c) a capacity to think clearly and cogently about the social and moral applications of ideas and events;
- (d) a capacity to learn continually in a variety of ways;
- (e) a capacity to evaluate ideas and ideals;
- (f) an understanding of where humankind has been and whither it is proceeding; and
- (g) a capacity to express clearly.

I would like to make a particular plea here for the History and philosophy of Science and Technology, which is as broad as it is interdisciplinary, and which I consider should be the basic armament of common learning for all engineers.

It is usual for technologists not to attach much importance, while accepting the results of science and technology, to the means by which or the environment in which such results are produced. Somehow the human context of scientific discussion or technological innovation appears unnecessary because, according to our technological educators, the study of the early stages of science and technology is but a record of mistakes, blunders and failures. It is true that, by holding this view, they are in the distinguished company of the car maker, Henry Ford, who is reputed to have made the notorious remark; "History is Bunk". But some of the finest minds have felt otherwise. George Santayan, the eminent philosopher, has tersely pointed out: "Those who cannot remember the past are condemned to repeat it."

At the most superficial level, our students should know at least, in their chronological sequence, the broad turning points of our evolving scientific heritage. When we see one of our scientists, one who had held important positions in our Government and in our Universities, talking of Copernicus as a disciple of Galileo,³⁰ whereas Galileo was born twenty one years after the death of Copernicus, one cannot but feel that a little more general, education wouldn't have hurt the competence of this scientist in his field of specialisation.

But at a different level, the History and philosophy of Science and Technology does indeed enable us to clear our mental cobwebs. Let me give a simple example. According to Francis Bacon, one of the earliest theorists of the scientific method, the way to conduct research was to collect a lot of data through experiment and observation. Hypothesis, testing and fully developed theories would automatically follow. Scientists and technologists swear by this even to this day. Professor C.F. Powell, on receiving his Noble Prize in Physics in 1950, explicitly mentioned "my great Countryman Francis Bacon" as his mentor. Yet we have clear evidence, from examining significant discoveries like John Dalton's Atomic Theory, Gregor Mendel's Theory of

Genetics and even Albert Einstein's Theory of Relativity, that experiments alone cannot play a dominant role (as suggested by the Baconian dictum) in the development of science. It is to be remembered that observations are not made just at random nor is the induction process a mathematical operation. Intuitive flashes, sudden leaps of understanding, lights from the human heritage, these give direction to inquiries, control over random experimentation, and pave the way to discoveries. It is not as though any individual can achieve important results by merely collecting data. We can go further and discount the corollary that research can solve any problem whatsoever, provided there is money enough for staff and equipment.

We also learn to appreciate how much we are part of the past. Whether it is the choice of problems to examine, or (traversing to a deeper layer of scientific process) the choice of the scientific method, or the conversion of science into technology, scientists and technologists cannot avoid coming into contact with their heritage. As the physicist, Werner Heisenberg, has said: "The scientific tradition, that is, the historical process, provides us with many problems and encourages our efforts. And that is a sign of a very healthy state of affairs in science."³¹ And I would assert that that is the reason for studying the History and Philosophy of Science and Technology.

Having argued the case for including a sizeable portion of Humanities and Social Sciences in engineering curricula, it is necessary to consider the problems involved in doing so to ensure that the expected benefits will accrue. There is, first of all, the need for humility on the part of the teachers of Humanities and Social Sciences. They have really no control over what happens with the material they communicate to students. The lack of boundaries and the scope for vivid imagination can lead to unexpected frontiers of thought and action. It is equally essential to bear in mind that social, philosophical and economic problems are extremely sophisticated and complex and need deeper investigation than is possible for the average engineering student. The teacher must reconcile himself to giving instruction only enough for the future engineers and technologists to be able to comprehend different points of view.

A major problem here is that Humanities and Social Sciences are very much on the defensive, no doubt on account of their alleged lack of a vocational bias. Instead of treating it as a strength, the practitioners of these studies have adopted the style of discourse of the scientists in order to vest these subjects with some sophistication of meaning which they imagine to be absent otherwise. It should, however, be possible to avoid this saddling of the Humanities and Social Studies with abstruse and esoteric terminology, with the hope of making them accessible to everyone. Those who specialise in Humanities and Social Sciences need not claim exclusive proprietary rights to impart instruction in these areas. Sometimes—though not invariably—a scientist or technologist would be able to bring unexpected insights into those areas. The eminent historian of technology, Professor Lynn White Jr., tells us how what he missed to discover in the writings of Leonardo da Vinci, despite years of study, was easily comprehensible to Ladislav Reti, an

engineer, when he paid some attention to it.³² It is interesting also to see that when, during the early part of nineteenth century, engineering education was dominated by France, the best of the Schools, *Ecole de Ponts et Chaussées* offered teaching and research in economics. As a result of this collaboration, it had become possible for engineers to contribute substantially to the development of economic analysis.³³ In general the world of knowledge is full of such feats of cross-fertilisation, and students of Humanities and Social Sciences should welcome with open arms other specialists into their fold.

Let me say that ultimately engineers and scientists operate in this human society for the sake of human beings, an overwhelming majority of whom will not be technologists or scientists. We must be constantly on our guard against the development of 'The Two Cultures' (to use Lord Snow's celebrated phrase) and prevent the gulf existing between scientists/technologists and others widening yet further. A mechanical approach to the social/technological problems will not prove useful because, in real life, society and technology have to exist in a symbiotic relationship. Human actions cannot be assessed in the way we evaluate physical objects. The affectionate embrace, for example of a mother and her child, cannot be simply seen as movements of two pieces of organic matter. Obviously we need to see in this more than forces, fields, particles, mass, torque, etc. Therein lies the need and justification for a sizeable content of Humanities and Social Sciences in engineering studies.

In the final analysis, it all boils down to the question: What sort of human beings should our academies of higher learning in science and technology (be they Institutes or Universities or Colleges) aim at training and giving to the world? A useful servant or an Independent enquirer? It is my contention that we need a combination of both if we are to face confidently the problems of the future.

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From Secondary to Higher Education: Focus on Women*

KARUNA CHANANA AHMAD

It is a well known fact that there has been a rapid expansion and growth of the formal educational system in post-independent India. This expansion took place till the 70's. Since then there has been virtual stagnation because of a very slow rate of educational growth. It is equally well-known that its spread has been uneven and that there are disparities in educational progress between rural and urban areas, between different sections of the population (namely, between the scheduled castes and tribes, on the one hand, and non-scheduled castes, on the other), between regions or states and between the sexes. While all these dimensions are equally important we propose to analyse and discuss two aspects, namely, the gap between the education of men and women at the secondary and higher stages and the regional variations

Our focus will throughout be on the impact of educational growth on the development of education for women. We would like to see, for instance, how disparities are reflected at the secondary and higher stages of education and what is the difference, if any, for women and men? Are they more marked at the secondary stage than at the higher stage? For example, is the gap between men and women wider at the secondary stage or at the higher stage? What is the enrolment of men and women at the secondary and the university stage? What percentage or proportion of women and men at the secondary stage pass on to the higher stage? Do more men than women pass on to the higher stage and if so what are the reasons?

We attempt to answer some of these questions by looking at the figures relating to the number of institutions for women, their enrolment, percentage distribution, age-specific enrolment and the growth rate of their education.

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Whenever possible we have given comparative figures for men as well. We have tried to demonstrate the uneven progress of the education of women in different stages in terms of their proportion to total enrolment and their age-specific enrolment.

There are hardly any studies which link the two stages of education and that, too, with a focus on women. In fact, even a comparison of the two stages and its implications for women's education has not been attempted so far with the exception of the Report of the Committee on the Status of Women in India (1975). This transition comes at a stage of girls' lives when crucial decisions are taken about their future and about whether they are going to college after secondary education. In other words, it raises questions of goals and objectives of women's education. For instance, are they going to get married during or soon after completing college education or are they studying to take up jobs thereafter? The answers to these questions are linked to role stereotypes and role perceptions. Thus, the goals of women's education, its relevance, the type of curriculum offered to them, etc., are all determined by the social perceptions of their role. Understanding the latter would help in understanding the goals and objectives of women's education.

Therefore, we contend that the problem cannot be understood only statistically. Statistics will tell us about growth, expansion, gaps and disparities, etc. But that is only part of the exercise. There is a qualitative aspect of the problem too. For instance we have tried to explain the gap or disparity between the education of men and women and the regional variation in educational growth in terms of socio-cultural context. Our contention is that these can be properly understood only if we relate them to prevailing social practices, behavioural patterns and values relating to the roles women and men are expected to play in society. In other words, the role expectations, related socialization norms, etc., determine whether girls will go in for higher education, what type of education they receive, and for how long. Thus even the goals and objectives of women's education are dependent on their roles in society as daughters, mothers and wives.

The Quantitative Dimension

Let us look at the expansion of education of women during the last three decades. We find that the literacy rate for females increased from 7.93 per cent in 1951 to 24.88 per cent in 1981. The corresponding figures for male literacy were 24.95 and 46.74 per cent respectively. In 1980-81, there were 55 girls enrolled for every 100 boys at all levels of the educational system instead of 33 girls in 1950-51. The total enrolment stood at nearly eleven crores in 1980-81. Out of these 389.64 lakh were girl students constituting nearly 35 per cent of total enrolment.

At the secondary stage, women students formed 30 per cent of total enrolment in 1980-81. In terms of percentage distribution, nearly 8 per cent women were enrolled at the secondary stage and 3 per cent at the higher

stage out of a total enrolment of about 390 lakhs. In other words, in comparison to men (31) only 12 women out of every 100 women were enrolled in school in the age-group of 14-17 years.

In 1977-78¹ there were 45,489 high and higher secondary schools in India. Those meant exclusively for girls were 6,330 i.e., 13.92 per cent. However, in 1976-77, there were 8,151 (18 per cent) high and higher secondary schools for girls out of a total of 43,721 such schools.² The decrease in the number of secondary schools for girls may not be alarming since it has not adversely affected enrolment. However, some questions are pertinent. For instance, why is there a decrease and were some schools closed down? If so, why and in which states of our country? However, what is noteworthy is that while the institutions for girls were only 14 per cent, their enrolment was 30 per cent. This indicates that a large number of girls are studying in co-educational institutions. There is need to get a break-up of women's enrolment by type of institution i.e., whether it is co-educational or not, and by stage and a break-up by region.³ This will help in mapping out areas and stages where co-education has made a headway so that future policy can take this into account. It would help in promoting co-education at those stages and in those areas where it is already accepted and to be cautious where it is otherwise.

(i) *Number of Institutions:* The number of institutions at the secondary stage for women increases from 1,064 in 1950-51 to 8,151 in 1976-77 (Table 1). But their percentage to total remains almost the same throughout the two and a half decades (14.6 per cent in 1950-51 and 14.1 per cent in 1976-77). At the college level (general education) the situation is almost similar although a slight increase was recorded between 1950-51 (13.9 per cent) and 1970-71 (15.9 per cent). In Institutions of professional education the number as well as the proportion decreases during the 70's.

Table 1
NUMBER OF INSTITUTIONS FOR WOMEN, 1950-51 to 1976-77

	1950-51			1970-71			1976-77		
	Total	Girls	% to Total	Total	Girls	% to Total	Total	Girls	% to Total
High/Higher Secondary	7,288	1,064	14.6	36,738	5,301	14.4	43,721	8,151	14.1
Colleges for General Education	498	69	13.9	2,598	412	15.9	3,139	500	15.9
College for Technical and Professional Education	300	24	8.0	922	450	5.1	2,401	167	7.0

Source: Bhandari, 1982, p. 44.

(ii) *Enrolment:* Table 2 gives figures of enrolment for women from 1950-51 to 1980-81 at the two stages. While there were 1.61 lakh women in secondary

schools in 1950-51, barely 0.47 lakh were enrolled at the higher stage (including general and professional education). While in 1980-81 there were nearly 31 lakh women in the institutions for secondary education and a little over 12 lakh women were enrolled at the higher stage. Even if one were to include women who were taking various post-secondary vocational and technical courses, the situation does not change substantially. Another point to note here is that while the gap between the enrolment of men and women at the higher stage is decreasing since 1950-51, it is more marked in general education than in professional education. In the latter, not only is the number of women per 100 men very low (15), there has also been no change during the last decade.

Table 2

ENROLMENT OF WOMEN BY STAGE

(figures in lakhs)

<i>Year</i>	<i>Secondary stage IX-XII</i>	<i>College and* Universities (General Education)</i>	<i>Professional & Technical Colleges</i>	<i>Vocational & Technical Schools</i>
1950-51	1.61 (16)	0.41 (16)	0.06 (10)	2.59 (19)
1960-61	5.41 (25)	1.50 (27)	0.33 (13)	4.22 (25)
1970-71	17.08 (37)	6.14 (38)	1.38 (15)	6.03 (60)
1980-81	30.98 (43)	10.00 (45)	2.38 (15)	3.20 (38)

Note: 1. *Figures in parentheses indicate the number of girls per 100 boys.*

2. **Figures relate to enrolment at undergraduate and postgraduate levels and in research in the arts, science and commerce courses.*

Source: Bhandari, 1982, pp. 31-32.

As mentioned earlier, there were 30 per cent women to total enrolment as compared to 26.5 per cent in 1975-76 at the secondary stage. However, their number per 100 men was forty three in 1980-81. At the college and university level, there were 33 per cent women students to total enrolment as compared to 25.1 per cent in 1977-78. Again there were 49 women per 100 men at the same stage. Thus, there has been an increase during this period in the proportion of women to total enrolment at both levels. However, the increase is higher at the higher stage (from 25.1 to 33.3 per cent) than at the secondary stage (from 26.5 to 30 per cent). This implies that while there is greater need to expand the secondary education than the higher education the growth of women's education is moving in the reverse direction.

The implications of this trend for the women are tremendous. While their proportion continues to register an incline in general education at the college and university level, they seem to continue to be hopelessly outnumbered in the prestigious professional courses at the higher stage. Even

in the less prestigious vocational and technical courses, their enrolment registers a sharp decline in numbers during the last decade, i.e. from 6.03 lakhs to 3.20 lakhs. Thus, bringing down their number from 60 to 38 per 100 men.

(iii) *Percentage Distribution:* What is the percentage distribution of women at different stages of education? Table 3 sets out stage-wise statistics from 1950-51 to 1980-81. In the year 1950-51 nearly 13 per cent women were enrolled in secondary level courses.⁴ This percentage goes up to about 25 per cent in 1980-81. In other words, while 1 in 12 women students were enrolled in secondary courses in 1950-51, the corresponding figures for 1980-81 were 1 in 4. The corresponding figures for men were 20.9 and 26.4 per cent in 1950-51 and 1970-71 respectively.

Table 3

PERCENTAGE DISTRIBUTION AT DIFFERENT STAGES OF EDUCATION

Year	Pre-primary	Primary	Secondary*	University	Professional Schools**	Total
1950-51						
Boys	0.1	70.0	20.9	2.0	7.0	100.0
Girls	0.2	82.4	12.7	0.6	4.1	100.0
1960-61						
Boys	0.3	67.3	24.7	2.7	5.0	100.0
Girls	0.6	76.7	18.4	1.3	3.0	100.0
1970-71						
Boys	0.3	66.3	26.4	4.5	2.5	100.0
Girls	0.5	74.3	19.5	2.4	3.3	100.0
1980-81						
Boys	Figures not given in Bhandari					
Girls	0.8	70.2	25.0	2.5	1.4***	100.0

Source: India, 1975, p. 240, Table VII Bhandari, 1982, pp. 31-32, Table 11.

* Secondary includes middle, high and higher secondary.

** It is not clear whether this includes vocational & technical schools.

*** includes professional colleges and technical schools.

At the university stage although the percentage distribution goes up from 0.6 per cent to 2.4 per cent, the figures continue to remain dismally low.

(iv) *Age-Specific Enrolment:* However, it is not enough to know the sheer enrolment in numbers or the proportion of women to men and to total enrolment or even the percentage distribution of women at different stages of education. We should relate it to the corresponding age group in the

population so as to enable us to find out what proportion of the population that ought to be enrolled at school or college is there or is not there? Table 4 sets out statistics relating to the age-specific enrolment of men and women at the secondary and university stage. We see that the percentage of women to men at both the stages is almost half and it is also less than the average at both the stages. Moreover, the situation does not seem to have changed since 1975-76. Although the figures for men are also not very encouraging yet those for women are indeed very disheartening. Granted that our priorities should be to expand the primary and middle stages of education³, it is still questionable whether 11.0 per cent is all that we should have at the secondary stage.

Table 4

ENROLMENT AS PERCENTAGE OF THE POPULATION IN THE
CORRESPONDING AGE GROUP

	<i>Secondary Stage (IX-XII) 14-17 years</i>		<i>University (General) Education) 17-23 years</i>	
	1975-76	1977-78	1975-76	1977-78
Men	25.6	25.2	6.3	5.8
Women	10.5	11.0	2.6	2.4
Total	18.3	18.3	4.5	4.2

Sources: 1. *India, 1981, Table 1, p. 63.*
2. *India, 1979, Table 1, p. 22.*

(v) *Growth Rate:* What was the growth rate for women at the secondary and higher stages of education? Is there any difference in the growth rate of men and women by stage? Is it higher at one stage than at the other and if so what are the reasons? It may be noted from Table 5 below that in the first decade the enrolment of women at the university stage is much higher than at the secondary stage. The gap narrows down as we proceed towards the 80's. This may be due to several factors. First, there is an overall slackening of educational growth after the 70's and this affects men as well as women. In other words, this happens because the expansion of education tapers off. Second, the higher growth rate for women at the university stage (116.9% in 1965-66, 91.3% in 1970-71) as compared to men (53.6% in 1965-66, 80.3% in 1970-71) may be due to the fact that the number of women was smaller so that any increase becomes magnified. Therefore, they started from a narrow base and any expansion would get exaggerated if calculated in percentages. The same explanation could be offered for the difference in high growth rate of women's enrolment at the university stage and slow-growth rate at the secondary stage. Third, it may also reflect the bias of the educational system. In view of the well-established fact that our educational system has a very narrow socio-economic and urban base and given the fact that the system is expanding faster at the university stage, it may not

be wrong to infer that the fruits of educational expansion are being monopolized by the already privileged minority of our country and this is more so in the case of women.

Table 5

QUINQUENNIAL GROWTH RATE OF ENROLMENT OF MEN AND WOMEN
BY LEVEL OF INSTITUTIONS
1960-61 to 1980-81

<i>Period</i>	<i>Secondary</i>	<i>University (General Education)</i>	<i>Professional, Technical and Others</i>
1960-61 to 1965-66			
Men	79.5	53.6	5.4
Women	70.7	116.9	84.8
Total	77.8	65.3	20.4
1965-66 to 1970-71			
Men	15.0	80.3	--5.6
Women	82.2	91.3	--11.7
Total	27.8	82.9	--7.3*
1970-71 to 1975-76			
Men	17.9	23.5	4.9
Women	29.1	42.2	37.3
Total	20.9	28.2	--6.7
1975-76 to 1980-81			
Men	3.6	--10.7	15.7
Women	12.5	14.6	20.0
Total	6.2	3.6	16.5

Source: Bhandari, 1982, Table 15, p. 39.

* Decrease due to closure of adult education centres during the period.

The Committee on the Status of Women went a little further and divided higher education by level to see whether women were doing better at undergraduate or post-graduate level. Table 6 sets out data relating to the proportion of women to men across levels at the university stage for two decades. The proportion of women to men in 1970-71 was higher (25.8) at the post-graduate level than at the undergraduate level. Within our specific socio-economic context, this too indicates that women's education, more than men's education, is confined to the urban based middle and upper strata.

Regional Variation

We shall now look at the enrolment of women at the secondary and tertiary stages in different states and union territories of India to demonstrate

Table 6

PROPORTION OF WOMEN TO MEN AT THE UNIVERSITY STAGE

Year	Under-graduate	Post-graduate	Research	All Levels
1950-51	10.8	12.1	14.1	10.9
1960-61	16.2	17.3	15.6	16.2
1970-71	21.6	25.8	20.7	21.9

Source: India, 1975, Table 10, p. 242.

(a) the uneven progress across our country, and (b) to focus on states which are extremely backward in women's education and where the gap between the education of men and women is very marked. In Table 7 we present the percentage of women to total enrolment at both the stages in different regions

Table 7

PERCENTAGE OF WOMEN TO TOTAL ENROLMENT IN CLASSES IX-XII AND IN HIGHER EDUCATION STAGE 1980-81

States/Union Territories*	Classes IX-XII	Higher Stage
Andhra Pradesh	30.12	26.6
Assam	36.71	25.1
Bihar	14.90	13.1
Gujarat	34.53	28.9
Haryana	23.60	32.0
Himachal Pradesh	26.56	28.3
Jammu & Kashmir	31.33	34.8
Karnataka	33.51	24.8
Kerala	48.78	46.9
Madhya Pradesh	22.94	25.5
Maharashtra	31.06	31.0
Manipur	37.04	33.8
Meghalaya	40.74	30.3
Orissa	28.15	17.8
Punjab	37.85	39.8
Rajasthan	21.39	20.4
Arunachal Pradesh	25.00	**
Tamil Nadu	34.40	31.0
Uttar Pradesh	15.93	19.0
West Bengal	30.98	31.3
Delhi	42.52	39.4
Pondicherry	33.33	**

Source: Bhandari, 1982, pp. 93-95.

* Those with very low enrolment (in numbers) have been excluded, e.g., Nagaland, Sikkim, Tripura, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Goa, Daman & Diu, Lakshadweep and Mizoram.

** Not given.

during 1980-81. It may be noted that U.P. (15.93) and Bihar (14.90) have the lowest proportion of women to total enrolment. The other states where their proportion is quite low (between 20-29%) are: Haryana, Himachal Pradesh, Madhya Pradesh, Rajasthan and Orissa. Most of these states are from the Hindi-speaking northern belt and have been backward in education.

What is the situation at the higher stage? Here we find that Bihar (13.1) and U.P. (19.0) continue to be at the lowest extreme while Orissa joins with 17.8 per cent. The states in the next category (20-29%) are: Himachal Pradesh, Rajasthan, Madhya Pradesh, Assam, Gujarat and Karnataka. It is noteworthy that while the proportion of women's enrolment at this stage increases in Haryana, it decreases in Assam, Gujarat and Karnataka, the three states which had a higher percentage of women enrolled at the secondary stage. Kerala and Delhi maintain a consistently high record at both the stages. In Kerala their proportion is 37.3 and 6.0 per cent at secondary and higher stage respectively while the corresponding figures for Delhi are 44.2 and 15.7 per cent.

How does this proportion compare to the enrolment of women proportionate to their corresponding age group? Is there any difference between the age specific enrolment of men and women? Do women continue to be disadvantaged in this respect too? Table 8 gives the age-specific enrolment of women at the secondary and higher stages in different states in India. We find that the age-specific enrolment is lowest (below 10%) in Bihar (9.3), Arunachal Pradesh (4.0) and Sikkim (6.5). Those states where it is low (between 10-19%) are: Andhra Pradesh, Haryana, Karnataka, Madhya Pradesh, Orissa, Rajasthan, U.P. and West Bengal. On the other hand, in Kerala and Delhi the age-specific enrolment is the highest at the secondary stage.

Let us compare the age-specific enrolment of men and women and look at the disparities if any. The states and union territories with least disparity are: Chandigarh, Kerala, Punjab, Delhi and Goa, Daman & Diu. On the other hand, states with most marked disparity are: Himachal Pradesh (20.9 men; 7.0 women), U.P. (25.7 men, 5.1 women). Pondicherry (48.7 men, 23.4 women), and Bihar (15.3 men, 2.8 women). It may be worthwhile mentioning that the disparity is most marked in those states where the enrolment of women to total enrolment (Table 7) is low, as for instance, Bihar and U.P. Pondicherry is an exception. Although it has a fairly high proportion of women in the corresponding age group, yet here the disparity between the age-specific enrolment of men and women is also high.

At the higher stage, Chandigarh instead of Delhi, takes the lead with 25.3 per cent age-specific enrolment of women (in arts, science and commerce courses). Delhi is second (15.7) followed by Manipur (6.7), Kerala (6.0) and Meghalaya (5.2). Here, too, the difference between Chandigarh and Delhi, on the one hand, and Delhi and Manipur, on the other, is quite marked. Again, the disparity between men and women is high in Manipur (14.2 men 6.7 women) and Meghalaya (8.9 men, 5.2 women). What is noteworthy here is that the age-specific enrolment of women is higher (15.7) than men (14.6)

Table 8

PERCENTAGE OF ENROLMENT TO POPULATION IN CORRESPONDING
AGE GROUPS, 14-17 & 17-23

1977-78

State/U. T.	Classes IX and above 14-17 years			College (General Education) 17-23 years		
	Men	Women	Total	Men	Women	Total
Andhra Pradesh	14.7	6.2	10.5	6.1	2.6	4.5
Assam	21.4	11.0	16.5	6.4	2.4	4.5
Bihar	15.3	2.8	9.3	5.7	1.0	3.5
Gujarat	31.8	17.1	24.7	5.2	2.6	4.0
Haryana	16.4	6.4	11.8	7.0	2.9	5.1
Himachal Pradesh	41.0	13.4	27.0	4.4	1.5	2.9
J & K	28.2	11.4	20.0	3.8	2.7	3.3
Karnataka	22.9	11.5	17.2	9.1	3.4	6.0
Kerala	40.5	37.3	38.9	6.4	6.0	6.2
M.P.	17.7	5.9	12.0	3.8	1.6	2.7
Maharashtra	35.6	16.2	26.1	5.7	2.5	4.1
Manipur	36.9	17.7	26.8	14.2	6.7	10.3
Meghalaya	31.9	20.8	26.2	8.9	5.2	7.0
Orissa	20.9	7.0	14.1	4.1	0.9	2.6
Punjab	29.2	19.4	24.7	7.3	4.6	6.1
Rajasthan	22.6	5.4	14.5	4.6	1.2	3.0
Tamil Nadu	33.9	17.8	25.9	5.7	2.5	4.1
U.P.	25.7	5.1	16.1	4.4	1.4	3.0
West Bengal	24.6	11.6	18.3	7.8	2.9	5.5
Chandigarh	24.7	24.1	24.4	34.3	25.3	30.3
Delhi	56.0	44.2	50.5	14.6	15.7	15.1
Goa, Daman & Diu	37.6	26.1	31.7	5.1	3.2	4.2
Pondicherry	48.7	23.4	35.8	8.4	3.8	6.0
Arunachal Pradesh	6.2	1.8	4.0	0.9	0.1	0.5

Source: *Education in India 1977-78*, pp. 188-89.

in Delhi, while in Kerala there is hardly any gap (6.4 men and 6.0 women). The states with marked disparity are: Haryana, U.P., Orissa, West Bengal and Lakshadweep.

The reasons for the backwardness of Hindi-speaking states in the education of women are not only expediency or late introduction of the English education in these areas. The more crucial factors are socio-cultural ones which prevailed, and perhaps continue to prevail, against educating women in a highly secluded social set-up where *purdah* in one form or the other has been practised. In these states, the social norms and values preclude the inclusion of women in the school system which involves moving outdoors and mixing with the opposite sex. Again, early marriage precluded them from receiving education for too long. These and other social practices could help explain the backwardness of some states while lack of seclusion and

rigid sex segregation and related social practices did not hamper the promotion of education of women in certain others.

The high proportion of women in secondary and higher stage in Delhi and Chandigarh may also be due to the fact that both are capital cities with large bureaucratic organizations which require educated manpower and workforce. Kerala, on the other hand, has had a high rate of literacy. Similarly, Pondicherry has had a long tradition of education under the Portuguese rule. Punjab is an exception in so far as it is a state where *purdah* was practised and where education of women made a slow beginning. But it began to catch up by 1930's due to the various social reform movements (Ahmad, 1983).

Concluding Observations

The education of women had a late start in our country and continued to expand slowly and gradually in the pre-independence period. It registers a phenomenal increase for two decades after independence until it tapers off. The educational system expanded rapidly till the late sixties and early seventies. Its expansion slows down considerably after that. The implication of this for women is that their gains were part of the general expansion of which men too were beneficiaries. It also means that women did not gain because of special efforts or programmes or because of a focussed policy relating to their education (Ahmad, 1979).

The growth rate is higher for women than men at the secondary and at the higher stages because they start from a narrow base i.e. their enrolment in numbers is small. It is still higher in professional education at the higher stage because in those specialized courses the number of women is still smaller than in general education. Again, the disparity between the enrolment of men and women is less at the higher stage than at the secondary stage. And at the higher stage, the disparity between the education of men and women seems to have narrowed more at the post-graduate than at the undergraduate level. The fact that the disparity between men and women is less at the higher level than at the lower level within the higher stage indicates that the benefits of educational expansion are limited to a minority of well-off sections of our society. Although this is part of the general trend this is more marked in the case of women.

The expansion and growth of women's education, its direction and the disparity between the education of men and women cannot be underscored only statistically. It has two aspects: quantitative and qualitative. The former refers to the statistical and the educational dimension while the latter refers to the socio-cultural factors. Some of the notable quantitative variables would be: lack of adequate facilities for women's education, namely, schools, scholarships, lack of women teachers etc. It is the qualitative dimension, however, that ultimately determines the decisions regarding their education, their goals and objectives, amount and degree of education etc. Any policy dealing with women's education will have to take these factors into account.

In other words, the explanation for the growth, expansion or lack of it can be better understood within its socio-cultural context which is characterized by early marriage, seclusion of women or *purdah* resulting in rigid sex-segregation, the prejudice against educating girls, the role stereotypes, and the reluctance of parents to send their daughters to schools located far away from their homes etc. We have referred to some of these while explaining the backwardness of Hind-speaking northern states in women's education. Similarly, the emphasis on separate schools for girls (instead of co-educational institutions), the need for women teachers for girl students can also be understood within the context of *purdah* which pre-empted free-mixing of the sexes except those defined by the kin group. Coupled with these factors is the lack of appreciation for women's education because it is not linked to their future roles as wives and mothers. And if there is any link with jobs (as in the case of men) majority of women are not expected to work either.

However, there is the added dimension in the contemporary scene where a large number of those from middle strata are beginning to take up jobs in the urban areas. The rising cost of living is driving more and more girls and women to work. The Committee on the Status of Women also pointed out that women were the sole earners in many urban families. There is need to explore this aspect and surveys may help explode the 'myth' that women from middle and upper strata do not work. On the other hand, women from working classes and lower strata, in the urban areas and a large majority of rural poor like the agricultural and landless labour have always worked and have been an economic resource in the family. While the social practices and behavioural norms, mentioned above, have inhibited the expansion of women's education among upper and middle strata of our society, economic pragmatism and poverty coupled with social factors determine the need for and response to women's education at the lower end of the social hierarchy. For instance, a poor family is likely to send a son rather than a daughter to school because resources are limited and social role expectations are that a daughter is going to leave after marriage while the son will be the earner. In fact, while she stays away from school, she provides extra labour in the house, or on the farm or wherever else the family needs it until such time that she is married.

Pointers to Research

What we have attempted here is a comparison of the two stage of education and that two on a very limited scale. What needs to be done is to look at these two together with a view to focussing on the transition from one to the other stage. For this, a different set of questions will have to be asked. As for example, how many or what percentage of women and men who finish secondary school join higher education? Do more men than women go on to the higher stage? What is their distribution subject-wise and level-wise and how does their enrolment compare to that of men? This may be done separately for each state. This exercise will also establish a direct link

between secondary and higher education. Most of these questions and those that follow may be answered by manipulating the existing statistical data. For instance, coefficient of equality should be worked out for girls by stages of education. Again, there is need to get a break-up of institutions by rural/urban area as also a break-up of enrolment by type of institution (i.e. whether it is meant for women alone or is it co-educational) and by stage. As indicated in the text the purpose is to map out areas where co-education is more acceptable and the stages at which it can be more readily introduced. This exercise will help in formulating policy regarding co-education.

Comparison of outturn and performance of men and women by stage should be worked out which will enable us to answer questions like who is doing better, in which discipline and at what stage? Also, whether there is a difference in the outturn and performance of women at secondary and higher stage. We should use time-series data or undertake longitudinal studies. What needs to be done is to undertake exercises of the like done for drop-out or wastage at primary or middle stage.

Why is the proportion of women to men higher at the research level than at the post-graduate level? Is it because women can combine marriage, family responsibilities and studies because of a flexible time schedule of the research students? If so, perhaps, we should think of part-time, flexible, even if longer, courses. Should we continue to define a 'student' as someone who must devote 'full-time' to studies in an educational institution.

Finally, we suggest that there is need to evolve a policy on women's education. Otherwise, the disparities by sex and region will continue to persist. In fact, these disparities are likely to increase as the pressure on the educational system will continue to mount due to increasing numbers. In addition women, more often than men, are either sent or not sent to school for social considerations. For instance, the prestige value of a degree or certificate is much more valid in the case of women than in the case of men. Therefore, any policy relating to women's education must view it within a specific framework and take cognizance of the social imperatives as well.

References

1. The latest figures relating to institutions are available for this year. Even Bhandari gives statistics for 1976-77. Tabulated from *India*, 1981, Table IV. pp 113 115
2. See Bhandari, 1982, p. 44. The difference in the number of institutions cannot be accounted for even if we were to include Intermediate and pre-degree colleges (464 total).
3. 'Region' here denotes the various states and union territories of India.
4. The actual figures will be less if the middle school enrolment is excluded.
5. The figures of age-specific enrolment of girls at the primary level were 62.6 per cent (6-11 age group) and 24.4 per cent at middle-level (11-14 years).

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Educational Equality and Economic Opportunities: A Comparative Study of Scheduled Castes and Non-Scheduled Castes

KUSUM K. PREMI

It is widely documented that education helps to raise the status of individuals and groups and that more educated on an average have higher earnings than less educated. Based on this assumption, it has been taken for granted for a long time that more education means more equality. This view has, however, been recently challenged by number of social scientists. For example Jencks and his associates¹ have argued that differences in levels and quality of schooling and cognitive skills are not very closely related to subsequent inequalities in life chances. More recently Boudon² has found educational leverage too weak to be taken seriously and he goes on to argue that to equalise life changes, the attack must be direct on inequalities in income and wealth. In the Indian situation also there is evidence, though scattered, of powerful effect of social background on educational attainments and entry into higher occupations and earnings.

These facts, however, should not suggest that extended education for people of very low, or even modest, social origin would not improve their occupational opportunities and earnings. What education seems incapable of doing is to erase the influence of social background on occupational opportunities. On the basis of review of some European studies, the Organisation for Economic Cooperation and Development for Scientific and Technical Personnel⁴ has come to the conclusion that "link between education and occupation is undeniable, but it is not rigid. The dispersion among occupations is great at each educational level and there is overlapping between the levels. There are clearly other important causal factors besides education and these rather crude measures of social background."

In this paper, taking scheduled castes and non-scheduled castes as two groups having different social background, an attempt has been made to investigate the impact of family background on occupational attainments and earnings. More specifically I have tried to answer the following two questions:

- (1) Are there significant differences between the scheduled castes and non-scheduled castes in their occupational attainments with the same level of education?
- (2) Whether the income levels of two groups of workers differ significantly with the same level of educational attainments?

For the purpose of this study we have used the data collected by the Directorate General of Employment and Training on the employment pattern of graduates in India by taking a sample of 36,000 individuals who had taken their first degree in 1968. The survey was conducted in 1973, five years after the respondents had completed their first degree. These data provide information on the degree obtained, the activity status of those persons who were not found working at the time of survey, occupation pursued by the employed persons (first as well as current) alongwith their earnings. The response to the questionnaire was 24.2 per cent.

Although the DGE & T data are fairly detailed both in regard to educational and occupational categories these have been combined together in order to have meaningful analysis. For example, for comparing the activity and occupational status we have three educational categories e.g. graduate general, graduate professional and postgraduate general. Similarly the 99 occupational categories have been reduced to nine. For differentials in earnings, however, we have taken more educational categories.

Keeping the above in view, in this paper, first the relationship of activity status and education has been examined for the scheduled castes and the non-scheduled castes population groups. This analysis is followed by an analysis of the occupational status and earnings of the scheduled castes and non-scheduled castes groups when education is controlled. The last section of the paper sums up the entire discussion and raises some further issues for indepth study of the problem in comparative perspective.

Education and Activity Status

When a person (specially a male) has completed graduate level education, his general tendency would be to get into some job or other since there is societal expectation from every able bodied individual to work and earn his livelihood to support not only himself but also other members of his family. This will be more so in case of those individuals who have very little holding power and who cannot wait long for an appropriate job. Such persons would also find it hard to continue in educational system. The survey was conducted by DGE&T five years after the respondents had completed their first degree i.e. in 1973. On apriori consideration, therefore, there is little

possibility of the scheduled castes people (who are generally poorer than others) to continue to be students in 1973 and one would expect a significantly lower rate of unemployment among the scheduled castes than among non-scheduled castes.

Table 1 gives the distribution of scheduled castes and non-scheduled castes male respondents according to the examination passed in 1968 and their current (1973) activity status.

These data do not indicate any significant differences with respect to the proportion of students and trainees (Col. 10 & 11), the proportion for the two groups among all graduates being 5.0 and 5.5 per cent respectively (values of z being .78 which is not statistically significant). Also among persons not at work there are no significant differences between the two groups in professional categories of education, both at graduate and post-graduate levels. However, the proportion of unemployed graduates in general categories (both at graduate and post-graduate levels) are significantly higher among the scheduled castes as compared to the non-scheduled castes. These findings are not in conformity with the hypothesis set above, that is the proportion of unemployed person should be less among the scheduled castes as compared to non-scheduled castes. But this should not lead us to think that scheduled castes have better holding power than others. On the other hand there may be several reasons for the lower employment rates of scheduled castes. For example, it is quite likely that in the scarce job market, those who are able to wield some influence on the selecting authorities are able to get jobs more quickly than others. These people are generally likely to be non-scheduled castes. It is also possible that the system of reservation of seats is not strictly followed by the employers in appointments, particularly in private sector. Further, reservation of seats in jobs might be leading to rise in aspirations of scheduled castes and once they are graduates they might be aspiring in greater proportions for civil services of central or state governments. Lastly, one cannot rule out bias in sample because of large non-response which is inherent in a mailed enquiry.

Education and Occupational Status

It has been generally observed that education helps in raising the occupational status of individuals and groups i.e. more educated on an average get better paid and higher status job. However, there is no denying the fact that education does not help individuals and groups equally effectively. The groups may be males and females, white collar and blue collar workers, or negroes and whites as in America. The available evidence, mostly on Negroes, suggests that education is more effective among whites than among negroes.⁵ Impact of home on occupational placement was also observed in an English Study.⁶ Based on this we have hypothesised that scheduled castes with the same level of education would be found in lower status jobs as compared to the non-scheduled castes,

Table 1

DISTRIBUTION OF THE SCHEDULED CASTES AND THE NON-SCHEDULED CASTES MALE RESPONDENTS BY
THEIR CURRENT ACTIVITY STATUS AND EXAMINATION PASSED IN 1968

Current Activity Status	Post-graduate General		Post-graduate Professional		Graduate General		Graduate Professional		All Categories	
	SC	NSC	SC	NSC	SC	NSC	SC	NSC	SC	NSC
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. Full time or part time paid employee or self-employed	149 (71.29)	4,081 (78.62)	12 (85.71)	548 (88.24)	290 (47.24)	6,340 (55.39)	233 (85.66)	9,004 (81.12)	684 (61.62)	19,973 (70.43)
2. Full time or part time student/trainee	7 (3.35)	219 (4.22)	0 (0.00)	24 (3.86)	47 (7.64)	935 (8.17)	1 (0.37)	374 (3.37)	55 (4.95)	1,552 (5.47)
3. Not at work	53 (25.36)	891 (17.16)	2 (14.29)	49 (7.89)	278 (45.20)	4,172 (36.45)	38 (13.97)	1,722 (15.51)	371 (33.43)	6,834 (24.10)

- Notes:
1. Post-graduate (general) includes those persons who are holding either a doctorate degree or Post-Graduate degree in arts, science or commerce.
 2. Post-Graduate (professional) includes post-graduate degrees in engineering and technology, medicine, agricultural and veterinary sciences, marine geology, library science, business, management, law and education, etc.
 3. Graduate (general) category includes persons holding honours and bachelor's degree in arts, science or commerce.
 4. Graduate (professional) category includes those persons who have bachelors' degree or diploma in any of the subjects specified in (2) above.

In the original coding of DGE&T data occupations were coded according to 5 digit National Classification of Occupation. As this classification was too detailed, the whole classification is condensed into nine categories. Similarly educational levels are combined to give meaningful interpretation to data. Data for three educational levels by nine occupational categories for the first occupation of the employees are presented in Table 2.

Table 2

DISTRIBUTION OF THE SCHEDULED CASTES AND THE NON-SCHEDULED CASTES MALE WORKERS BY EDUCATIONAL ATTAINMENTS CROSS-CLASSIFIED BY CONDENSED CATEGORIES OF FIRST OCCUPATION

Occupational Categories	EDUCATIONAL CATEGORIES							
	Post-Graduate General		Graduate General		Graduate Professional*		Total	
	SC	NSC	SC	NSC	SC	NSC	SC	NSC
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	26	404	24	586	39	1,930	89	2,920
2.	2	35	7	110	4	41	13	186
3.	48	2,796	114	2,952	79	3,618	241	9,366
4.	0	20	0	38	0	15	0	73
5.	6	70	5	157	4	156	15	383
6.	70	617	146	2,140	12	303	228	3,060
7.	-	19	9	50	2	26	11	95
8.	1	67	8	199	9	240	18	506
9.	4	121	9	303	9	242	22	666
Total	157	4,149	322	6,535	158	6,571	637	17,255

Occupational Categories are:

1. *Scientists, architects, engineers, physicians and surgeons, mathematicians, statisticians, economists, accountants, auditors, social scientists and related workers and jurists.*
2. *Physical and Life Science technicians, engineering technicians and nurses and other medical health technicians and related workers.*
3. *Teachers.*
4. *Poets, sculptors, composers, other artists and related workers.*
5. *Elected officials, administrative and executive officials, proprietors, managers and other related workers.*
6. *Clerical and related workers, book-keepers, cashiers, computing machine operators and related workers.*
7. *Transport and communication supervisors, transport conductors and guards, mail, distributors, telephone and telegraph operators and villages officials.*
8. *Sales workers.*
9. *Service workers, farmers, fishermen, production and related workers, transport equipment operators and labourers.*

* Professionals here include only Engineering Graduates, Agriculture and Veterinary Graduates and Bachelors in Education.

The X^2 test of goodness of fit of the distribution of scheduled castes as compared to the non-scheduled castes workers is found to be statistically significant for all the groups put together. This implies that there is differential placement of scheduled castes workers as compared to non-scheduled castes workers in the job market. The difference between observed and expected frequencies for the scheduled castes indicate their significantly low representation among the teachers and a significantly high representation among the "clerical and related workers, book-keepers, cashiers, computing machine operators and related workers" and among "transport and communication supervisors, transport conductors and guards, mail distributors, telephone/telegraph operators and village officials".

The classification of current occupations of the employees for specified educational categories present similar picture (Table 3) The differences are significant for all the levels of education and strengthen the above conclusions.

Table 3

**DISTRIBUTION OF SCHEDULED CASTES AND NON-SCHEDULED CASTES
MALE WORKERS BY EDUCATIONAL ATTAINMENTS CROSS CLASSIFIED
BY CONDENSED CATEGORIES OF CURRENT OCCUPATION OF THE
EMPLOYED**

<i>Occupational Categories</i>	<i>Post graduate</i>		<i>Graduate General</i>	
	<i>SC</i>	<i>NSC</i>	<i>SC</i>	<i>NSC</i>
(1)	(2)	(3)	(4)	(5)
1.	27	431	26	24
2.	2	44	6	112
3.	48	2,700	101	2,660
4.	0	22	2	38
5.	6	97	5	146
6.	65	615	115	1,514
7.	2	20	9	47
8.	2	59	8	169
9.	5	153	11	299
Total	157	4,141	283	5,447

Note: Occupational categories in this table are the same as used in Table 2.

Because of some computer problem cross-tabulation of occupational distribution of workers by education terminated at B.Sc. level, hence the graduate (general) category relates to B.A. and B.Sc. pass people only. For the same reason it has not been possible to give here the occupational distribution of graduate (professional) group.

These findings relating to occupational differentials are in keeping with the findings of a number of studies conducted in Europe and America. Both

in developed as well as developing countries, education has been found to be playing the rôle of preserving status quo (strengthen the social division of the society).

Education and Income

Based on the recent evidence that education is incapable of equalising the life chances of individuals and groups, it is hypothesised that scheduled castes with the same level of education would be having significantly lower incomes than their non-scheduled caste counterpart. Earning of workers is also affected by their residence, age and sex. Earnings increase with experience even without any formal qualification. In a sophisticated analysis it is necessary not only to control for all these variables but also several others. Our data, however, do not permit us to have all the variables controlled.

The data that we are using provide information on the earnings of graduate workers. These data are available in respect of both first job (1968) and current job (1973). The workers have also been classified as employees and self-employed in terms of their current placement. The first earning are, however, available only for the employees. Here also if a person got promotion in the same organisation and continued to work there, information relating to his first job was not recorded and thus the data on his first earnings were lost. Keeping these limitations in mind, the median monthly income from the first job and current job have been worked out separately for scheduled castes and non-scheduled castes for those levels of educational attainments where the number of scheduled castes did not fall below ten. Table 4 presents the figures on median monthly income of the scheduled caste and non-scheduled caste workers according to their first occupation and current occupation by levels of education attained.

The number of cases on the basis of which medians have been worked out have been given in parenthesis. The educational levels covered in the Table are: M.A.; B.A./B.Sc./B.Com. (Hons.) courses; B.A. (Pass); B.Sc. (General) B.Com (Pass); B.Engg.; B.Sc. Vet. and Agr.; and B.Ed. The other levels of education have been left out since number of scheduled castes workers in those categories was very small and no meaningful analysis was possible.

Our analysis of data shows that none of the differences between the median monthly earnings from the first job of the scheduled castes and non-scheduled castes are statistically significant when we apply the test of significance for differences between the two medians. Thus one may infer that for people who have attained formal education at the graduate level, there is no discrimination in the job market in terms of their earnings at the time of entry into the jobs.

When we consider the current income of the employees (of 1973) we find once again that there are no significant differences between the median monthly earnings of the scheduled castes and non-scheduled castes workers

Table 4

**MEDIAN MONTHLY EARNINGS OF THE SCHEDULED CASTES AND THE
NON-SCHEDULED CASTES MALE WORKERS FROM FIRST OCCUPATION
AND CURRENT OCCUPATION BY SPECIFIED LEVELS OF EDUCATIONAL
ATTAINMENT**

<i>Level of Educational attainment</i>	<i>First Income</i>		<i>Current Income</i>	
	<i>SC</i>	<i>NSC</i>	<i>SC</i>	<i>NSC</i>
(1)	(2)	(3)	(4)	(5)
M.A.	242.42 (112)	237.05 (2318)	368.00 (102)	368.42 (2169)
Graduates (Hons.)	280.00 (38)	253.04 (869)	354.15 (33)	389.86 (830)
B.A. (Pass)	215.00 (193)	196.25 (2455)	307.50 (185)	298.44 (2306)
B.Sc. General	270.59 (39)	273.75 (1918)	303.50 (33)	367.35 (1780)
B.Com.	209.09 (38)	241.50 (1024)	300.00 (36)	360.00 (974)
B. Engg.	464.29 (35)	439.01 (2054)	557.69 (35)	558.21 (1915)
B.Sc. Vet. & Agr.	262.50 (44)	293.97 (1234)	362.50 (41)	414.04 (1140)
B.Ed.	230.00 (78)	219.39 (3154)	367.24 (73)	357.93 (3030)

for all the educational levels considered here except B.Sc. and B.Com. One has, however, to concede that among the non-scheduled castes, proportion of graduates who are self-employed is large and these also have higher incomes as compared to employed.

Our hypothesis about income is thus only partially confirmed by our data. It seems that once a person has acquired certain level of education (graduates in this case) there may be occupational differentials but not income differentials. This may be explained to less developed state of education in our country. Consequently, here higher education plays the same role as selective education in the advanced countries.⁷

Conclusion

Summing up one can say that though education helps in raising the occupational status and income levels of all the groups of workers yet it has differential impact on the two groups of workers i.e. scheduled castes and non-scheduled castes. Unemployment rates are higher among the scheduled castes graduates compared to non-scheduled castes so also their occupational status lower. Although median incomes of two groups of workers do not differ significantly so far as the first job is concerned, there are significant differences in the current jobs of B.Sc. and B.Com. graduates.

On the basis of these findings one may be tempted to say that in India, as in Europe and America, education plays the role of preserving status quo (strengthen the social division of society). However, to arrive at such a conclusion there is need to carry out more studies with finer categorisation of education and classification of occupations. Performance in examinations need to be controlled as well. Nevertheless, the trend can not go unnoticed particularly, in view of reservation of jobs for the scheduled castes, there is need to probe into the causes of higher unemployment rates for scheduled castes, differential placement of two groups and differences in the current earnings of scheduled castes with specific levels of education. One need to ask such questions—Is differential patterns due to some bias on part of employing authorities or is it due to poor performance of scheduled castes in examination or lack of certain skills i.e. communication, which plays, an important part in interview situation? Or, again, can the differential occupational pattern be ascribed to low aspiration level of scheduled castes or some builtin inhibition for jobs which were once considered sacred? Can part of the explanation be found in the anxiety of scheduled castes to get secure, may be less prestigious jobs? These and several other questions need to be asked if one wishes to see the proper impact of education on economic opportunities of people coming from different socio-economic background. It will also be fruitful to examine the role of education at various levels, primary school, high school and college graduates both professional and non-professionals. In the case of developed countries it is observed that at very low levels of education and again at selective levels, the impact of social background in occupational placement is not significant? Will the pattern repeat in developing countries? This will give important comparative perspective.

References

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Notes from Research

EDUCATION, EARNING AND OCCUPATION OF WEAKER CASTES

Objective of the Study

The main objective of the study is to make an assessment of the employment experience of the scheduled castes, scheduled and denotified tribe students graduated from Marathawada University during the academic years 1977, 1978 and 1979 in different faculties such as Arts, Social Sciences, Commerce, Science, Law, Medicine, Engineering and Education.

Hypothesis

It is hypothesised in the study that lower social classes graduates have longer searching time, lower salaries, lower status jobs and higher possibilities of unemployment than higher class graduates. An attempt is also made to find out whether there exists any correlation between the weaker castes students and low paid jobs and higher proportion of unemployment.

Survey Design and Sampling Procedure

The Marathawada region of the state of Maharashtra comprised of five districts of Aurangabad, Parbhani, Nanded, Beed and Osmanabad. There are eighty-five colleges in the region imparting higher education in the faculties of Arts, Social Sciences, Commerce, Sciences, Law, Engineering, Medicine and Education.

The colleges which were selected for the study are having the concentration of scheduled castes, scheduled tribes and denotified nomadic tribe students. To strike a balance between rural and urban colleges, three rural centres, namely, *Omeraga*, *Hingoli* and *Ambejagai* and two urban centres namely, *Aurangabad* and *Nanded* cities were purposively selected. From these five educational centres, 16 colleges imparting education in different areas are selected.

A complete list of students, both weaker and high castes, passing out of the selected colleges during the reference year (1977, 1978 and 1979) was collected. All these successful graduates were classified into two categories, namely, Scheduled Castes (S.C.), Scheduled Tribes (S.T.) and Denotified Nomadic Tribes (DNT) constituting the weaker castes and the rest higher castes (See Table) 1.



Table 1

CASTE-WISE DISTRIBUTION OF EMPLOYED AND UNEMPLOYED GRADUATES

	<i>Employed</i>	<i>Unemployed</i>	<i>Total</i>
High Castes	193	367	560
Scheduled Castes	88	321	409
Scheduled and Denotified Tribes	29	56	85
Grand Total	310	744	1,054

Both mailed questionnaire and personal interview methods were used. Taking both the methods together, the total response rate was observed to be about 48 per cent (i.e., 1,065 out of 2,206).

Rural-Urban Representation of Graduates

It is evident from Table 2 that 88.7 per cent of the low caste graduates hail from rural areas as against only 58 per cent of the high-caste graduates belonging to rural areas. In other words, we may say that only 11.3 per cent of the sample low caste graduates belonging to the urban areas. Whereas, in the case of high castes, the proportion is quite high at 42 per cent. There seems to be a high percentage of high caste graduates hailing from urban centres. Among the female graduates also the same trend is evident. Of the 80 high caste females eighty per cent hail from urban areas, while in the case of low caste female graduates, only 18 per cent belong to urban centres, while the majority (82 per cent) come from rural areas.

Table 2

RURAL-URBAN REPRESENTATION OF GRADUATES

	<i>Rural Graduates</i>			<i>Urban Graduates</i>		<i>Total</i>	<i>Grand Total</i>
	<i>Males</i>	<i>Females</i>	<i>Total</i>	<i>Males</i>	<i>Females</i>		
Low Castes	427	11	438 (88.7)	54	2	56 (11.3)	494 (100)
High Castes	310	16	326 (58.2)	170	64	234 (41.8)	560 (100)

Terms in parentheses denote percentage distribution.

Average Family Income

There appeared to be a great difference between the average annual incomes of the weaker castes and high caste families. The highest income range for the weaker caste family was found to be Rs. 10,000—15,000, while in the case of high caste families, the relevant highest income range was observed to be Rs. 50,000—60,000. The average annual income of the weaker caste was found to be about one-third of that of high caste families (i.e., Rs. 228 and Rs. 7,894 respectively); it was also observed that the income distribution in

both the categories was highly skewed. The median income of weaker caste was found to be Rs. 1,503 per annum, while in the case of other castes, it was much higher at Rs. 4,531 per annum, or about thrice the average family income of the weaker castes. This obviously indicates the stronger economic position enjoyed by the high caste families. A further analysis of the low average income of the weaker castes reveal that a major portion of their family incomes originates from low-paid, low status jobs like agricultural workers, sweepers etc. On the other hand, the comparatively higher levels of income of the high caste families are relatively high due to their well-paid jobs and sizable income from property. It is interesting to note that 42 per cent of the weaker caste families have income below Rs. 1,000 per annum, while in the case of high caste families, only 11 per cent belong to this category. Another 40 per cent families amongst the low castes have income between Rs. 1,000 and Rs. 5,000. About 44 per cent families from high caste belonged to this income group. This is the largest block of high caste families falling in a single income group. There were about 14 per cent and only 5 per cent weaker caste families in the income groups of Rs. 5,000 to 10,000 and Rs. 10,000 and above respectively.

Academic Performance

The percentage of scheduled castes, scheduled tribes and denotified nomadic tribes students passing their S.S.C. examination in first class is only 7 per cent, while the corresponding percentage of high class students is relatively high at 23 per cent (Table 3). This low percentage of first classes among low caste students, in fact, reflect their social and economic disabilities, like low family incomes, lack of any educational background of the parents, lack of various educational facilities and guidance etc. The proportion of students passing the S.S.C. examination in the second class was almost the same for the same low caste (54 per cent) and high caste (52 per cent) pupils. But the percentage of students passing in third class is pretty high (about 40 per cent) among scheduled castes, scheduled tribes and denotified nomadic tribe students, while it is only 25 per cent for high caste students.

Table 3

ACADEMIC PERFORMANCE OF THE LOW CASTE AND HIGH CASTE STUDENTS AT THE S.S.C. (MATRICULATION) EXAMINATION

	<i>First Class</i>	<i>Second Class</i>	<i>Third Class</i>	<i>Total</i>
Low Castes (S.C., S.T., D.N.T.)	32 (7)	244 (54)	176 (39)	452 (100)
High Caste	119 (23)	274 (52)	134 (25)	527 (100)

Terms in parenthesis denote the percentage distribution to the total in each category.

It is evident from Table 4 that low caste students have a strong preference for social science subjects and a declining proportion of them (21 per cent) have opted for commerce and science subjects (14 per cent). On the other hand, about 55 percent of pupils belonging to the high castes have joined commerce (34 percent) and science (21 per cent). While less than half of the number opted social sciences courses. A closer examination has shown that, most of the Brahmins among high castes, have strong preference for science courses which hold-out job opportunities in the field like engineering and medicine.

Table 4

FACULTY-WISE DISTRIBUTION OF SAMPLE STUDENTS

	<i>Social Sciences</i>	<i>Commerce</i>	<i>Science</i>	<i>Total</i>
Low Caste	309 (65)	101 (21)	67 (14)	477 (100)
High Castes	235 (54)	175 (34)	107 (21)	517 (100)

Terms in parenthesis denote the percentage distribution.

The Table 5 shows that not even a single student could secure first class either at the B.A. or B.Com. examinations. The performance of the high caste students securing first class in various examinations was relatively better. For example, at the B.A. B.Com. and B.Sc. examinations, the percentage of high caste students obtaining first division was found to be 0.4 per cent 5.1 per cent and 8.4 per cent respectively. It is only in the faculty of science that the weaker caste students could make a mark of improvement as at 3 per cent of them could secure first division. If first division is considered as an indication of meritorious performance of a candidate, then the academic performance of weaker caste students at the graduation level has to be considered far from satisfactory.

Table 5

FACULTY-WISE DISTRIBUTION AND ACADEMIC PERFORMANCE OF THE SAMPLE STUDENTS AT GRADUATE AND POST-GRADUATE LEVEL

<i>Examination</i>	<i>Division</i>	<i>Low Caste</i>	<i>High Caste</i>
B.A.	First Class	Nil(0)	1(0.4)
	Second Class	117(38)	148(63)
	Third Class	192(62)	86(36.6)
	Total	309(100)	235(100)
M.A.	First Class	10(11.9)	13(22.4)
	Second Class	63(75.0)	43(74.1)
	Third Class	11(13.1)	2(3.5)
	Total	84(100)	58(100)
B.Com.	First Class	Nil(0)	9(5.1)
	Second Class	51(50.5)	118(67.4)
	Third Class	50(49.5)	48(27.5)
	Total	101(100)	175(100)

<i>Examination</i>	<i>Division</i>	<i>Low Caste</i>	<i>High Caste</i>
M.Com.	First Class	11(45.8)	7(63.6)
	Second Class	13(54.2)	11(36.4)
	Third Class	Nil(0)	Nil(0)
	Total	24(100)	18(100)
B.Sc.	First Class	2(3)	9(8.4)
	Second Class	27(40.3)	71(66.4)
	Third Class	38(56.7)	27(25.2)
	Total	67(100)	107(100)
M.Sc.	First Class	4(40.0)	9(69.2)
	Second Class	6(60.0)	3(23.1)
	Third Class	Nil(0)	1(7.7)
	Total	10(100)	13(100)
Medicine	First Class	Nil(0)	7(30.4)
	Second Class	5(71.4)	16(69.6)
	Third Class	2(28.6)	Nil(0)
	Total	7(100)	23(100)
Engineering	First Class	2(66.7)	14(53.8)
	Second Class	1(33.3)	11(42.4)
	Third Class	Nil(0)	1(3.8)
	Total	16(100)	24(100)
Education	First Class	1(3.7)	4(11.1)
	Second Class	19(70.4)	29(80.6)
	Third Class	7(25.9)	3(8.3)
	Total	27(100)	36(100)
Law	First Class	Nil(0)	3(12.5)
	Second Class	15(93.8)	21(8.75)
	Third Class	1(6.2)	Nil(0)
	Total	16(100)	24(100)

Terms in parenthesis denote the percentage distribution to the total in each faculty.

Likewise, the proportion of high caste graduates passing in second division (securing marks between 45 and 60 per cent) in the faculties of social sciences, was observed to be very high at 63 per cent (B.A.), 64 per cent (B.Com.) and 66.4 per cent (B.Sc.) respectively. On the other hand, the proportion of weaker caste graduates passing in second division was relatively low, namely, 38 per cent at B.A., 56 per cent at B.Com. and 40 per cent at B.Sc. examinations.

It is also evident that relatively large number of weaker caste students (84) have joined in social sciences, when compared with high castes (58). It is interesting to note that a majority of the low castes had secured third division at the first degree and one *fails to understand* such a good performance of them at the postgraduate examinations.

The number of low caste students joining in Medicine and Engineering was observed to be very small. There were only three weaker caste students in the sample who had successfully completed their degree courses in the faculty of engineering. As against this, the total number of high-caste sample students completing their engineering courses was quite high as 26. It has to be noted that both in medical and engineering courses, the percentage of total number of seats reserved for scheduled castes, scheduled tribes and denotified nomadic tribe students (i.e., 34 per cent). Even then, the number of students passing out of medical and engineering colleges is negligible.

It is interesting to note that there was not a single student among the low class sample graduates completing his post graduation in medicine and engineering. Here we may draw a major conclusion from the above findings that the proportion of low caste graduates joining professional courses like medicine and engineering is very low. Their enrolment is relatively better in the field of law and education.

Extent of Employment and Unemployment

An estimate of the proportion of employment and unemployment that prevails among the sample low caste as well as high caste is presented in Table 6. The analysis shows that despite reservation of jobs for the low caste communities, the incidence of unemployment among the scheduled castes, scheduled tribes and denotified nomadic tribes is as high as 73 per cent. While the per cent of open unemployment among the high caste students is relatively less at 59 per cent (while determining the labour force, we excluded the students who were prosecuting higher studies). There were 10 students (3.4 per cent) among the low castes and 29 pupils (5.7 per cent) among the high castes in this category. Secondly, we also excluded those students who had clearly stated that they needed no employment at all. These should be considered as a case of *voluntary unemployment*: It was observed that, there were eight students (1.4 per cent) from the high caste community in this category. While there was none from among the low castes. In this way, out of the total number of 494 low caste and 560 high caste graduate, the actual number of job seekers in the labour market was 475 and 532 graduate respectively. This number was considered as *labour force seeking gainful employment*.

Table 6

PATTERN OF EMPLOYMENT—UNEMPLOYMENT AMONGST THE SAMPLE GRADUATES

	Low caste	Percentage to total	High Caste	Percentage to total
Total Sample Size	494	—	560	—
Education Continued	19	---	29	---
Voluntary unemployed	—	---	8	---
Labour Force (1-2-3)	475	100.0	523	100.0
Wage Employment	101	21.3	158	30.2
Self-Employment	26	5.5	57	10.9
Total Employment (5+6)	127	26.8	215	41.1
Fully Employed (4-7)	348	73.2	308	58.9

Out of the total number of 475 low caste graduates only 101 could secure various types of jobs in different sectors of the economy. As against this, the percentage of high caste graduates obtaining employment was higher at 30.2 per cent (158 graduates out of 523 job seekers). The proportion of total labour force getting self-employed in business, trade and professions was observed to be very low for low caste as well as high caste graduates. Only 5.5 per cent (26 individuals) of the low castes and 10.9 per cent (57 individuals) of the high caste communities were found self-employed. Relatively, the proportion of high castes self-employed was higher and it was almost double that of weaker castes.

It was observed that the average monthly income of high-caste employed graduates was Rs. 713.02, while that of the low caste graduates was relatively lower at Rs. 570.54. This indicates that the average monthly income of the high caste graduate was higher by about 25 per cent than the average income of their weaker caste counterparts. About 90 per cent of the low caste graduates have income below Rs. 750. Similarly only 5 per cent of the employed low castes have income above Rs. 1,000 per month, while in the case of high castes, the corresponding percentage is four times higher at 21 per cent.

Although, the average monthly income of the high caste graduates was relatively higher than the average income of the low caste groups, the standard deviation in the former was found to be 336.26, while for the latter group, it was lower at 340.43. This indicates the fact that inequality of salary incomes within the high caste group is relatively more than what it is in the low caste groups.

Caste—Earning Relationship

It is found that out of the total number of 101 jobs held by weaker castes, almost 89 per cent are low paid ones; those of clerks, typists, school teachers etc. (Table 7). On the other hand, in the case of high caste communities, the percentage of clerks, typists and school teachers etc. is about 60 per cent. In other words, the share of weaker castes in high paid jobs, covering engineers, doctors etc was significant. There were only three per cent engineers among the low caste employees, while 16.6 per cent of high caste employed were engineers. Similarly in the field of medicine also, the respective percentage were two per cent for low castes and seven per cent for high castes.

Table 7

ASSOCIATION BETWEEN LOW CASTE AND LOW-PAID JOBS AND HIGH CASTES AND HIGH PAID JOBS

<i>Caste</i>	<i>Jobs</i>		<i>Total</i>
	<i>Low paid jobs</i>	<i>High Paid Jobs</i>	
Low Castes	88	13	101
High Castes	104	54	158
Total	192	67	259

Self-Employment

Out of 494 low castes only 26 (5.3 per cent) have started their own profession which may be included under the category of self-employment. On the other hand, of the 560

high caste graduates 57 (about 10 per cent) have launched their own enterprise or professions. As self-employment requires, apart from adequate capital, ability to organise, manage and bear risks, it is natural that the high caste graduates have a higher percentage of self-employment compared to weaker castes.

About one-third of the total self-employed, both in low caste and high caste categories, fall under the first income group of Rs. 5,000. Another 20 percentage of the low caste and 30 percentage of high caste fall in the income group of Rs. 5,000—10,000, there were about 33 per cent persons from low castes, while the percentage of high-caste falling in this group was only 16 per cent. But, in the highest two income groups, i.e., Rs. 15,000—20,000 and Rs. 20,000—30,000, the proportion of weaker castes, compared to the high caste was extremely low. It was found that the average annual income of the self-employed among low castes was Rs. 8,750 while it was relatively higher at Rs. 9,709 for high caste graduates.

Of the total number of 192 low caste B.As, only (17.7 per cent) could get wage employment, the remaining 80.2 per cent (154) B.A., graduates had to remain totally unemployed. This high proportion of unemployed among the low caste is quite staggering by any comparison. The percentage of high castes obtaining wage employment was 20.6 per cent while those who were self-employed was 7.5 per cent. The total employment obtained by them was 28.1 per cent. One important conclusion arrives from the data is that the rate of unemployment is heavy amongst the graduates and postgraduates obtaining B.A and M.A. degrees in social sciences. The percentage of unemployment is slightly higher in the case of the low castes graduates, post-graduates than amongst the high-castes. It is as high as 80.2 per cent (B.As) and 83.3 per cent (M.As) for low castes while it was slightly lower at 71.9 per cent (B.As) and 80.7 per cent (M.As) for high castes.

Indirectly, the above findings imply that we are producing excessive number of B.As and M.As which our economy cannot absorb. Hence, it may be suggested that, to avoid such huge national waste of talents and energy, we must re-design our educational system so as to restrict the number of students joining university education in social sciences.

Major Findings

The study comes to the major findings that there exists a close relationship between low castes and low status, low paid jobs. Similarly, it is also established that there is a high degree of positive correlation between high castes and high paid jobs.

Secondly, the low caste graduate required on an average a longer job-searching time than their high caste counterparts. The low caste graduates needed, on an average, 16 months to obtain a job, while the high caste graduate required 14.3 months.

Thirdly, the general rate of unemployment among the low caste graduates, is found to be very high (73 per cent), while it is relatively less among high caste graduates (59 per cent). Hence, the major findings of the study is that—'*lower social class graduates will have longer job-search, lower salaries, lower status and higher possibilities of unemployment than higher class graduates.*'

The general rate of unemployment amongst the low caste graduates is observed to be considerably higher (73 per cent) than among the high-caste graduates. Equally, the proportion of low caste female graduates in total employment is negligible (one per cent), while that of the high caste female graduate is considerably higher at 8.5 per cent.

Conclusion

To conclude, whether or there is no manpower or educational planning, the education system to become meaningful, must keep itself informed of what happens to its product when they enter the world of work. To what extent, the universities and higher educational institutions have been successful in meeting the social and economic needs of the society is the crux of any development planning. More precisely, to what extent the expectations of those who hail from lower socio-economic strata by facing many hazards have been achieved in getting the job to improve their economic lot should be the objective criteria of any policy research and positive discrimination of the state.

The results of the study shows that the relationship between education and employment has neither been planned nor any attention has been paid. Graduates with same qualifications have been made suitable for several types of jobs for which they are not trained or they are kept unemployed by our vicious social system. Therefore, the planning agencies can achieve better results of demand and supply equilibrium of graduates in the labour market and choice of students for different types of education is rationally resolved. The challenges of the study provokes us to think that investment in education, unless it is well planned and managed in terms of their overall demand, the human capital theory is nothing more than a '*black box theory*' which gives explanation only to the superficial and peripherals of the subject matter

References

1. For instance '*ALEX PARADOX*' attempts to resolve as to why that in a highly meritocratic societies there is a weak correlation between fathers education and status and son's education and social status.
This theory explains the problem in his model in two ways: firstly, those sons coming from a high social background and having higher level of education will tend to experience more demotion given their initial advantage, and secondly, in a highly meritocratic societies, there is no one to one correspondence between the education and social structure. Though, this proposition amounts to a *Paradigm conflict*, contrary to the *equilibrium paradigm*, such as the paradoxes resolved by changing validity standards as tests to be applied to a thesis. In that angle, Alexander's approach is distinctively different from both Marxist and evolutionary research traditions. His thesis is essentially a social replication of social inequalities on the role of social structure in determining individual choice. His model is essentially based on two basic propositions, namely, the relation between education and social mobility and different factors that affect education and mobility in different societies. He concludes by saying that the reduction in educational inequality do:s not necessarily lead to reduction in social inequality. For details see, '*ALEX PARADOX*' by Alexander V. Verghese, Occasional paper, Indian Institute of Education, Pune (1982).
2. Relevant to the context, Haspel Abraham in his Questionable Role of Higher Education as an occupational screening device states that employees optimally pursue activities which facilitate, the co-ordinating employee characteristic is the level of education. Employees with higher level of education are rewarded with higher wages, than employees with lower level. This may occur that higher level of education of an employee does not necessarily mean more productive, but only a matter of belief that individuals with higher levels of education are allowed to enter into higher paying positions. For details see, Haspel Abraham, '*Occupational Screening Device*', State University of New York, Buffalo (1970) pp. 279-294.
3. For a detailed account on the related issues, see, *Indian Education: The Great Training Robbery*, Alexander V. Verghese, Bulletin of Higher Education (1982), Bhagawati J, '*Education, Class structure and Income Inequality*', World Development, May (1973) pp: 17-23, Heyneman S.P., '*Investment in Indian Education*': *Uneconomic?*; World Bank Staff Working Paper No. 327, Washington D.C. (1979), Panchamukhi P.R.; '*Employment and Educational Policy*'. Manpower Journal, Vol. XIV, No. 1, April-June (1978).

Alexander V. Verghese

COLLEGE TEACHING—DESCRIPTION AND ANALYSIS

The major objective of the study was to identify the general lecture pattern of college teachers as a group. The specific objectives of the study were: 1. To find out the average durations of time out of one hour of lecturing period used by college teachers for the seven major

components of lecturing process—information processing, soliciting, responding, reacting, giving directions, pausing, and providing scope for student participation; 2. To identify specific behaviours under each major component of lecturing process that college teachers show preference for in their lectures; and 3. To compute certain indexes with a view to understand the nature and quality of present college teaching in general.

Scope of the Study

The study was confined to college teachers working in the colleges situated in the jurisdiction of the Karnatak University, Dharwad. The study was further confined to teachers teaching the following subject fields:

- | | | |
|---------------------|-----|----------------------------|
| (a) Humanities | — | i. Kannada |
| | | ii. English |
| (b) Social Sciences | --- | i. History |
| | | ii. Economics |
| | | iii. Political Science and |
| | | iv. Sociology |

The selection of these subject fields was guided by the availability of large number of college teachers in these fields.

Data Gathering Tool

An equivalent category observation system for describing and analysing college instruction was developed and used for the collection of research data on teachers' and students' classroom verbal behaviour. The system covered the major lecturing components and the corresponding behaviours as detailed below:

<i>Major components</i>	<i>Corresponding specific behaviours</i>
Information processing	Factual, restricted, expanded and evaluative
Soliciting	Factual, restricted, expanded and evaluative
Responding	Factual, restricted, expanded and evaluative
Reacting	Praising—routine and rationalised levels, using student ideas, and criticising
Giving directions	Routine and extended
Pausing	Productive and non-productive
Student participation	All the specific behaviours mentioned above

Code nos. 1 to 20 refer to teacher behaviour and 21 to 40 to student behaviour.

Recording

The observer listens carefully to the teacher or student talk with an eye on the activities decides the code number that best represents the three second segment of teacher/student classroom behaviour and records in the observation sheet.

Training of Research Fellows in the Use of the System

One of the major characteristics of the system is the rhythm of making one observation for every three seconds, to be developed by the observers. Preceding the observational study, the two research fellows received extensive training in observation and coding of

college classroom instruction. The inter-rater reliability using Scott's coefficient of correlation was found to be consistently above 0.80. This standard normally meets the requirements of reliability of the observations.

Sample

Three hundred forty eight college teachers working in the colleges situated in the jurisdiction of the Karnatak University, Dharwad constituted the sample for the present study.

Table 1

**DISTRICT-WISE DISTRIBUTION OF SAMPLE OF COLLEGE TEACHERS
TEACHING SELECTED SUBJECT FIELDS (n=348)**

<i>District</i>	<i>Subject fields</i>						<i>Total</i>
	<i>Kan.</i>	<i>Eng.</i>	<i>Hist.</i>	<i>Pol.Sc.</i>	<i>Econ.</i>	<i>Soc.</i>	
Belgaum	22	20	6	13	19	12	92
Dharwad	35	34	18	20	26	19	152
Karwar	10	10	7	5	6	2	40
Bijapur	16	12	7	9	11	9	64
<i>Total</i>	83	76	38	47	62	42	348

Out of 348 teachers, 61 have four years or less than four years of teaching experience, 98 have more than four and less than ten years of experience, and 189 have ten years or more than ten years of experience. According to sex, there were 44 women teachers and 304 men teachers.

Scheme of Observation and Collection of Data

The plan was such that each teacher was observed twice for 30 minutes duration each time. The sample of each teacher's classroom behaviour constituted one full hour of classroom instruction. It was further ensured that the second observation episode was, in respect of the content taught, the continuation of the unit taught in the first episode. Secondly, the commencement of recording the observation was timed a few minutes after the beginning of the instructional session. This spell of a few minutes, it was thought, would enable the teacher to reconcile himself to the presence of the observer and settle down to his 'normal self' without exhibiting unnatural (to him/her) traits of behaviour.

The observation data were collected in three stages by the research fellows. In first phase, observation data relating to teachers working in Karwar and Bijapur districts were collected. In the second phase, observation data relating to teachers working in Belgaum and Dharwad (excepting Hubli-Dharwad corporation area) districts were collected. During the third phase, data relating to teachers working in the Hubli-Dharwad corporation area were collected. It may be pointed out here that the two research fellows worked for about four months each for the collection of observation data.

Analysis of Data

The data pertaining to lecturing behaviours of 348 college teachers collected with the help of 'observation system' in the form of category-wise frequencies constituted the raw

data for present study. The data were subjected to organisation, tabulation, and analysis in pursuance of the specific objectives of the study.

In order to identify the general lecture pattern of college teachers category-wise frequencies relating to teacher and student classroom verbal behaviours were added up for all the teachers involved in the study and corresponding percentages computed.

Table 2

CATEGORY-WISE AND ASPECT-WISE TOTAL FREQUENCIES WITH
REFERENCE TO TEACHER AND STUDENT CLASSROOM VERBAL
BEHAVIOURS AND THE CORRESPONDING PERCENTAGE (n=348)

Cat. no.	Description of behaviour	Total No. of frequencies	Percentage	Aspect-wise percentage
1	2	3	4	5
Source—Teacher				
1.	Information processing — factual	140545	33.323	} 93.426 (56'-03'')
2.	— restricted	212114	50.292	
3.	— expanded	40630	9.633	
4.	— evaluative	751	0.178	} 0.828 (0'-30'')
5.	Soliciting — factual	2131	0.505	
6.	— restricted	1153	0.273	
7.	— expanded	202	0.048	
8.	— evaluative	008	0.002	} 0.703 (0'-25'')
9.	Responding — factual	1408	0.334	
10.	— restricted	1258	0.298	
11.	— expanded	289	0.069	} 0.255 (0'-09'')
12.	— evaluative	—	—	
13.	Reacting — routine	527	0.125	
14.	— rationalised	054	0.013	} 1.429 (0'-51'')
15.	— using ideas	007	0.002	
16.	— criticising	483	0.115	
17.	Giving directions — routine	4782	1.134	} 1.965 (1'-11'')
18.	— extended	1245	0.295	
19.	Pausing — purposeful	3745	0.888	} 0.5082
20.	— not purposeful	4542	1.077	
Source—Student				
1.	Information processing — factual	2110	0.500	} 0.5082
2.	— restricted	034	0.008	
3.	— expanded	001	0.0002	
4.	— evaluative	—	—	} 0.0485
5.	Soliciting — factual	094	0.022	
6.	— restricted	099	0.023	
7.	— expanded	014	0.033	
8.	— evaluative	002	0.0005	} 0.7665
9.	Responding — factual	1934	0.458	
10.	— restricted	1165	0.276	
11.	— expanded	133	0.032	} 0.0005
12.	— evaluative	002	0.0005	

1	2	3	4	5
13. Reacting	— routine	003	0.0007	0.0037
14.	— rationalised	---	---	
15.	— using ideas	---	---	
16.	— criticising	012	0.003	0.019
17. Giving directions	— routine	023	0.005	
18.	— extended	059	0.014	
19. Pausing	— purposeful	035	0.008	0.030
20.	— not purposeful	093	0.022	
Total		4,21,687	99,9819	99.9819

**Figures in the parentheses indicate the timings used for different categories of behaviour in a period of one hour.*

The above analysis reveals the general lecture pattern of college teachers as a group as detailed below.

Out of a lecturing period of one hour's duration,

- (1) College teachers most of the time (i.e. 56 minutes and 3 seconds) in information processing;
- (2) They use 30 seconds only in soliciting/asking questions;
- (3) They use 25 seconds only in responding to student queries;
- (4) They use 9 seconds only in reacting to student answers or ideas;
- (5) They use 51 seconds only in giving directions to students;
- (6) They use 1 minute and 11 seconds only in the use of pause; and
- (7) They use 50 seconds only for giving scope to student participation in the classroom drama.

The following specific patterns in the lecturing behaviour of college teachers are also identified,

- (1) College teachers show a preference for 'restricted' and 'factual' processings of information.
- (2) College teachers show a preference for 'factual' and 'restricted' types of questioning.
- (3) College teachers show a preference for 'factual' and 'restricted' types of 'responding' to student queries.
- (4) College teachers show a preference for 'routine' and 'criticising' types of reacting to student ideas/answers.
- (5) College teachers show a preference for 'routine' type of giving directions to students.
- (6) College teachers use 'pausing' both with a purpose and without a purpose.
- (7) College teachers provide very less scope for students to participate in the classroom drama. Further students are found to largely reflect the teacher's classroom behaviour.

With a view to understand the nature and quality of lecturing behaviour of college teachers further, nine indexes were computed.

The indexes reveal the following:

- (1) Students are not given opportunity to participate in the classroom drama. The college teacher dominates in the drama.
- (2) The college teacher predominantly exhibits direct teaching behaviour.

Table 3
NINE INDEXES FOR THE SAMPLE (n=348)

<i>Index</i>	<i>Formula</i>	<i>Index value</i>
Student talk—Teacher talk ratio (STTTR)	$\text{STTTR} = \frac{\frac{\Sigma \text{cat. 21 to 35}}{\Sigma \text{cat. 1 to 18}}}{\frac{\Sigma \text{cat. 5 to 15}}{\Sigma \text{cat. 1 to 4 \& 16 to 18}}} \times 100$	1.3900
Indirect—Direct teacher talk ratio (IDTTR)	$\text{IDTTR} = \frac{\frac{\Sigma \text{cat. 1 to 4 \& 16 to 18}}{\Sigma \text{cat. 3, 4, 7, 8, 11, 12, 14, 15, 18 \& 19}}}{\frac{\Sigma \text{cat. 1 to 20}}{\Sigma \text{cat. 5 to 8}}} \times 100$	1.7568
Intellectual level of teacher talk (ILTT)	$\text{ILTT} = \frac{\frac{\Sigma \text{cat. 1 to 20}}{\Sigma \text{cat. 5 to 8}}}{\frac{\Sigma \text{cat. 1 to 4}}{\Sigma \text{cat. 7 \& 8}}} \times 100$	11.2850
Teacher question ration (TQR)	$\text{TQR} = \frac{\frac{\Sigma \text{cat. 1 to 8}}{\Sigma \text{cat. 3 \& 4}}}{\frac{\Sigma \text{cat. 1 to 4}}{\Sigma \text{cat. 7 \& 8}}} \times 100$	0.8789
Teacher information processing quality (TIPQ)	$\text{TIPQ} = \frac{\frac{\Sigma \text{cat. 1 to 4}}{\Sigma \text{cat. 7 \& 8}}}{\frac{\Sigma \text{cat. 5 to 8}}{\Sigma \text{cat. 13 to 15}}} \times 100$	10.5017
Teacher questioning quality (TQQ)	$\text{TQQ} = \frac{\frac{\Sigma \text{cat. 5 to 8}}{\Sigma \text{cat. 13 to 15}}}{\frac{\Sigma \text{cat. 13 to 18}}{\text{cat. 18}}} \times 100$	6.0103
Teacher response quality (TRQ)	$\text{TRQ} = \frac{\frac{\Sigma \text{cat. 13 to 18}}{\text{cat. 18}}}{\frac{\Sigma \text{cat. 17 \& 18}}{\text{cat. 19}}} \times 100$	8.2840
Teacher direction quality (TDQ)	$\text{TDQ} = \frac{\frac{\Sigma \text{cat. 17 \& 18}}{\text{cat. 19}}}{\frac{\Sigma \text{cat. 19 \& 20}}{\Sigma \text{cat. 19 \& 20}}} \times 100$	20.6500
Teacher silence quality (TSQ)	$\text{TSQ} = \frac{\frac{\Sigma \text{cat. 19 \& 20}}{\Sigma \text{cat. 19 \& 20}}}{\frac{\Sigma \text{cat. 19 \& 20}}{\Sigma \text{cat. 19 \& 20}}} \times 100$	45.1900

- (3) The intellectual level of teacher talk is not of high order. It is largely of 'factual' and 'restricted' type.
- (4) College teachers do not prefer to use questions in their lectures. They prefer to use information processing to a very great extent.
- (5) Information processing quality of college teachers is of low order. That is, the use mainly 'factual' and 'restricted' types of information processing and use 'expanded' and 'evaluative' types to a very little extent.
- (6) Questioning quality of college teachers is of low order. That they show preference for the use of 'factual' and 'restricted' types of questions in the class to 'expanded' and 'evaluative' types.
- (7) 'Responding' quality of college teachers is also of low order. That is, they show preference for 'factual' and 'restricted' types of responding in the class to 'expanded' and 'evaluative' types.
- (8) 'Directing' quality of college teachers is of low order. That is, they show preference for the use of 'routine' type of directions in their classes to the 'extended' type.

- (9) Quality of 'silence' of college teachers in the class is also not satisfactory. That is, they use 'pause' without any specific purpose to a greater extent.

It is thus seen that, these findings based on the indexes computed, support the findings based on Table 1.

Discussion

Information processing: Every college teacher has to use all the four types of information processing in teaching. The nature of teaching unit and the objectives towards which his teaching is directed should help the teacher in determining the extent to which different types of information processing should be used in his teaching. It is a matter of common-sense that 'factual' and 'restricted' types of information processing are useful in helping students acquire a piece of information/a corpus of knowledge whereas the other two types help them understand and comprehend abstract ideas, do not permit the information lie inert but make it a part of students' mental abilities thus promoting the general powers of the mind. But the study has revealed that college teachers largely use 'factual' and 'restricted' types of information processing only. It is therefore suggested that college teachers should be given training in the use of 'expanded' and 'evaluative' types of information processing in their teaching.

Soliciting: Questioning is an important teaching skill. Questions are generally asked by the teacher (a) to find out what the student knows and what he does not know, (b) to keep him alert and attentive in the class, (c) to revise the lecture and to fix it clearly in the mind of the student, and (d) to direct and encourage thought and thus to stimulate curiosity. Factual and restricted questions help in fixing information but they are not useful to encourage thinking or reasoning. 'Evaluative' and 'expanded' questions promote thinking on the part of students. As such, these types of questions should be used to a greater extent in college teaching, when the development of a mind and its training in method and attack are of prime importance in higher education. But the study has revealed that college teachers largely use 'factual' and 'restricted' types of questions only in their teaching. It is therefore suggested that college teachers be given training in the use of 'expanded' and 'evaluative' questions in their teaching.

Responding: This behaviour of teachers largely depends upon the 'soliciting' behaviour of students which in turn generally depends upon the 'questioning' behaviour of teachers themselves. The study has also revealed this kind of relationship. As such the discussion made in relation to 'soliciting' behaviour of teachers very well applies to their 'responding' behaviour.

Reacting: A teacher can react to the answers/ideas students give/express in more than one way. He may react to the student behaviour/idea at the routine or rationalised praise level or by criticising it or using it in the development of lecture theme. Out of these for reacting behaviours considered in the study, reacting at the 'rationalised praise' and 'using students ideas' levels are the more desirable ones. Because the former is helpful to the students in the learning process itself (as they are told the rationale of the reaction) and in the latter behaviour the student is rewarded at the highest level. Students' urges of social recognition and social acceptance are satisfied. But the study has revealed that these two types of reacting behaviours are used by college teachers to a very little extent. As such college teachers be introduced to these reacting behaviours and their place in teaching.

Directing: The two types of giving directions to the students in the class as a part of teaching serve two different functions. Narrow and routine types of directions like 'Let us today study the unit on 'culture and civilization'. 'Please take your text-book and turn to page 65', 'Look at the map' etc. give a direction to the student in the class and as such have a place

in actual classroom teaching. But the use of extended directions of the type—'suggesting additional sources with bibliographical details', 'explaining as to how notes should be made or taken' etc. help the students to a greater extent in their self-study and self-efforts resulting in real learning. But the study has revealed that college teachers largely use routine type of giving directions. It is therefore suggested that college teachers be introduced to the place and importance of giving 'extended directions' in their teaching.

Pausing: Pauses are of two types—productive and non-productive. Pausing becomes meaningful when the teacher remains silent, in the course of his teaching, with a view to stimulate thinking on the part of students. But there can be situations in the classroom where there is prevalence of silence when students are not stimulated to think. There may be silence when the teachers/ students are confused or when no teaching-learning is going on. This is non-productive pausing. The study has revealed that college teachers show preference for the use of non-productive pause. It is therefore suggested that college teachers be trained in the skill of using pause in teaching.

Providing scope for student participation: A student is said to participate when he responds to what the teacher asks for, contributes his own ideas related to the topic being taught or reacts overtly to others' ideas in the classroom. Students' participation in the classroom is essential because (a) Students are more attentive towards the lecture when they are participating and this attention is an essential condition for effective learning. (b) There will be better understanding on the part of students when they participate. (c) The teacher can continuously evaluate his teaching whether it is being effective in bringing about learning or not and (d) Students' urges of social recognition and acceptance are satisfied. The study has revealed that in the classroom situation, it is the college teacher who talks most of the time hardly providing any chance for the students to speak or express themselves. It is therefore suggested that college teachers be introduced to the maxim of teaching—'participation brings learning' and they should be trained in the skill of encouraging student participation in the teaching-learning process.

Conclusion

The study has revealed that college teachers need orientation and training in respect of the following lecturing skills:

- (i) Expanded processing
- (ii) Evaluative processing
- (iii) Expanded questioning
- (iv) Evaluative questioning
- (v) Reacting to student ideas at the rationalised/using student ideas levels
- (vi) Giving extended directions
- (vii) Pausing
- (viii) Encouraging student participation.

A promising programme for helping college teachers acquire the needed lecturing skills is microteaching. Microteaching is a teacher training technique in which the complexities of normal teaching are simplified. It is 'scaled down' classroom teaching and it helps the teacher practice selected teaching skills. The eight steps generally involved in microteaching cycle are—study, observe, plan, teach, feedback, replan, reteach, and refeedback. This cycle is repeated till the teacher attains a desired level in a particular skill. Microteaching thus provides the opportunity to concentrate on mastering one teaching skill at a time in a controlled situation.

It is therefore finally suggested that microteaching (may be self-instructional) courses on the selected lecturing skills be developed for the use of college teachers. Such courses, it is believed, shall help college teachers vitalize their teaching.

INFLUENCE OF INSTITUTIONAL AUTONOMY AMONG STUDENTS*

Decentralization of the University practices is the true hall mark of higher learning system. In accordance with University Grants Commission (UGC), University of Madras granted autonomous status to seven colleges (Adishesah, 1976 and Venkatapathy, 1979). Four colleges were at Madras, one at Trichy and the remaining three were at Coimbatore. In the initial stages, PSG College of Arts and Science (1979) conducted a survey relating to the attitude of the students towards the autonomous status of the Colleges. The results show that 60% of the students studied favoured autonomous status for the Colleges, while 15% had no opinion and 25% showed unfavourableness. This study alone may not sufficient and warrant full satisfaction towards the functioning of the autonomous colleges. It is most pertinent to look for better parameters other than the attitudinal disposition of the students to understand about the viability of the autonomous status courses in achieving its objectives. Looking for such psychological parameters leads to the consideration on anxiety and internal-external (I-E) locus of control as better predictors in attaining the futuristic goals. The present investigation aims to identify the influence of institutional autonomy among students using relevant psychological parameters viz., anxiety and I-E locus of control.

Method: Internal locus of control in the present context refers to the feeling one has that he has control over his own achievement. The external locus of control refers to the feeling one has that the external factors have control over his achievement.

Anxiety has been conceived as a measure of motivational drive which may influence in academic pursuits.

Sample: It was thought to study the organizational or institutional differences due to autonomy and lack of it. Of the two autonomous colleges functioning in Coimbatore. One of the colleges authority refused permission for the study, the above stated objective could not be persued. Hence, the study was restricted to an investigation of the differences in the psychological make-up of the students studying within the same institution. But the sample was drawn on different systems like students studying under autonomous status and students studying under non-autonomous status.

A sample of 70 boys, viz., 35 belonging to autonomous status and 35 belonging to non-autonomous status, studying mathematics as their main subject was selected using stratified random method. The mean and standard deviation of the age of the boys belonging to autonomous status were 17.25 years, 3.89 and for non-autonomous 18.92 years, 4.23 respectively.

Description of the Materials: Manifest Anxiety Scale (Taylor, 1953) and Internal-External Locus of Control questionnaire (Venkatapathy, 1979) were considered to obtain measures on anxiety and I-E locus of control of the subjects studied in the present investigation. The split-half reliability co-efficient was found to be .782 for manifest anxiety scale, and .609 for internal-external locus of control questionnaire.

Hypotheses: There were no empirical evidence to generate specific hypotheses. Hence the following null hypotheses were generated to test the influence of institutional autonomy among students with regard to anxiety and I-E Locus of control.

- (1) There is no significant difference on the levels of anxiety between the students belonging to autonomous status and non-autonomous status.
- (2) There is no significant difference on the levels of I-E locus of control expectancies of the students belonging to autonomous status and non-autonomous status.

*The author wishes to thank Dr. V. Natarajan, M.A., Ph.D. Social Psychologist, Tamil Nadu Medical Service, Madras for his suggestions.

Analysis: The scores of the subjects on the anxiety scale and internal-external locus of control questionnaire were analysed using test of significance between means. In order to test the relationship between the variables studied, Product moment correlation was worked out between the scores on anxiety and scores on I-E locus of control (Garrett, 1966).

Results and Discussion: The data were analysed to test the null hypotheses that there is no significant difference on anxiety and I-E- locus of control expectancies between the autonomous and non-autonomous status students, test of significance between means were employed.

Table 1 shows the significance of difference between mean anxiety scores of the autonomous status and non-autonomous status students.

Table 1

SHOWS THE SIGNIFICANCE OF DIFFERENCE BETWEEN AUTONOMOUS AND NON-AUTONOMOUS STATUS STUDENTS ON THEIR MEAN ANXIETY SCORES

<i>Groups Compared</i>	<i>N</i>	<i>X</i>	<i>S.D</i>	<i>M diff</i>	<i>SED</i>	<i>CR</i>	<i>P value</i>
Autonomous Status students Vs Non-autonomous Status students	35 35	20.80 16.50	2.00 1.94	4.3	0.80	9.15	.01

Table 1 reveals that the autonomous status boys significantly differ from the non-autonomous status boys on their-anxiety score. The mean anxiety score of the autonomous status boys is found to be higher than that of the non-autonomous status boys. The P value is found to be 9.15. The null hypothesis that there is no significant difference on the levels of anxiety between autonomous and non-autonomous status students is rejected. Hence, it may be concluded that there is a significant difference on the levels of anxiety between autonomous and non-autonomous status boys in which the former have more anxiety than the latter.

Table 2 shows the significance of difference between the autonomous status and non-autonomous status students on their mean I-E locus of control scores.

Table 2

SHOWS THE SIGNIFICANCE OF DIFFERENCE BETWEEN AUTONOMOUS AND NON-AUTONOMOUS STATUS STUDENTS ON THEIR MEAN I-E LOCUS OF CONTROL SCORES

<i>Groups Compared</i>	<i>N</i>	<i>X</i>	<i>S.D.</i>	<i>M diff</i>	<i>SED</i>	<i>CR</i>	<i>P value</i>
Autonomous Status students Vs Non-autonomous Status students	35 35	63.91 53.28	3.50 3.19	10.63	.47	13.28	.01

Table 2 indicates that the autonomous status boys significantly differ from the non-autonomous status boys on their mean I-E locus of control scores. The mean internal

score for the boys is found to be higher than that of the non-autonomous boys. The P value is found to be 13.28. Hence, the null hypothesis that there is no significant difference on the levels of internal locus of control orientation between autonomous and non-autonomous status students is rejected. It may be concluded that there is a significant difference on their internal locus of control orientation between autonomous and non-autonomous status boys in which the former have more internal locus of control than the latter.

In order to test the relationship between anxiety and I-E locus of control, the scores of the 70 students on each variable was correlated with one another. Product moment correlation was worked out between the scores of anxiety and I-E locus of control of the students.

Table 3 shows the correlation co-efficient of the variables studied in the present investigation.

Table 3

**CORRELATION CO-EFFICIENT OBTAINED BETWEEN ANXIETY AND I.E.
LOCUS OF CONTROL**

<i>Variable</i>	<i>Correlation obtained</i>	<i>Level of significance</i>
Anxiety Vs I-E Locus of Control	.652	.01

The correlation co-efficient obtained between anxiety and I-E locus of control is significant at .01 level. Hence, it may be concluded that anxiety and I-E locus of control are considered to be a better parameter to obtain measures to compare different status of autonomous in the present context.

Conclusions

Autonomous status students were found to have more anxiety compared to non-autonomous status students.

Autonomous status students were found to have more internal locus of control orientation compared to non-autonomous status students.

Anxiety and I-E locus of control were found to be significantly related.

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INTERACTIONAL EFFECT OF LENGTH, STYLE AND HANDWRITING ON THE MARKING OF EXAMINERS AT POSTGRADUATE STAGE—A STUDY

In the vital field of evaluation the participation of the teachers in selecting as well as constructing evaluation instruments has resulted in improved techniques on one hand it has clarified the objectives of instruction in making them real and meaningful to the teachers on the other hand. Therefore, the teachers occupy a vantage place in the process of evaluation who can make the valuation objective while adopting the new techniques and methods which have been explored. Evaluators in History are criticised and alleged for awarding more marks to lengthy answers with good handwriting. This axiom is famous that history teachers weight the answer scripts at the time of awarding marks and high rating is given to the answer scripts which are written with good handwriting. The teachers having good language background award high marks to such answer scripts which have good style of writing where the facts are accumulated in a proper way. Therefore, the answer scripts with good handwriting, better style, or lengthy, consistently receive higher scores than those with poor handwriting regardless of quality of content.

The researches of Chase (1968), Briggs (1970), Austin, Clark and Fitchett (1971), Brophy and Good (1972), Clifford and Waslster (1973), and Soloff (1973) have explored that handwriting or concepts being studied may influence the evaluation of the teachers consciously or unconsciously. The investigations conducted by Bhushan (1977), (1979) evinced that lengthy answer, better style and alluring handwriting significantly effect the evaluation of the teachers in History at high school stage.

However, there have been studies such as Bell (1969), Otto & Anderson (1969), Huitt (1972), Markhan (1976), Harry Hudge (1976), which have explored that the goal of improving handwriting of the children at elementary stage is to develop the idea in children to write legibly and to make the answer readable. Bhushan (1979) has reported that good handwriting is speculative to high scoring or better grades.

Objectives of the Study

The present study was conducted with the following objectives:

- (1) To explore the impact of length on the evaluation of the examiners.
- (2) To highlight the influence of style on the evaluation of the examiners.
- (3) To ascertain the effect of handwriting on the marking of the evaluators.
- (4) To study the composite effect of three variables when taken together.

Method

The model answer scripts were prepared by the investigators themselves which were nine in the first instance and twenty seven in the final stage. The model answer scripts were extended to 27 with the help of the students of Post-Graduate stage so that the answer scripts could be conveniently classified into three groups. These answer scripts were got rated by five experts who were regular examiners in History for the last 10 years experience of history teaching at the Post-graduate stage. The examiners were selected randomly. The examiners awarded marks on the separate sheet without putting any sign on the answer script.

Experimental Design and Treatment of Data

The data were treated by $3 \times 3 \times 3$ factorial design 'ANOVA' on the lines suggested by Snedecor and Cochran (1967), Lewis (1968) and Edward (1971). The outline of the research design is given below:

<i>Variables</i>	<i>Independent variables</i>
1. Length	$\equiv A$
Very lengthy answer	$\equiv A_1$
Average length	$\equiv A_2$
Small length	$\equiv A_3$
(2) Style	$\equiv B$
Lucid style	$\equiv B_1$
Jum led style	$\equiv B_2$
Ambiguous style	$\equiv B_3$
(3) Handwriting	$\equiv C$
Good handwriting	$\equiv C_1$
Average handwriting	$\equiv C_2$
Poor handwriting	$\equiv C_3$

Dependent variable: The dependent variable was the achievement of pupils in history at the Post-graduate stage.

Table 1
OUTLINE OF FACTORIAL DESIGN $3 \times 3 \times 3$ 'ANOVA'

(N in all \equiv is 5, M = Mean)

	A_1			A_3			A_3		
	C_1	C_2	C_3	C_1	C_2	C_3	C_1	C_2	C_3
	M= \equiv	M= \equiv	M= \equiv	M= \equiv	M= \equiv	M= \equiv	M= \equiv	M= \equiv	M= \equiv
B_1	17.00	16.2	14.4	16.4	15.8	13.8	17.8	16.2	15.4
B_2	17.00	15.6	15.6	16.00	16.2	15.02	16.6	14.8	13.00
B_3	14.4	14.2	13.6	13.4	13.00	12.8	13.6	12.8	11.6

Table 2
SUMMARY OF THE RESULTS OF ANALYSIS OF VARIANCE ($3 \times 3 \times 3$)

<i>Source of Variance</i>	<i>df.</i>	<i>Some of squares</i>	<i>Mean squares</i>	<i>Value</i>
A Length	2	12.637	6.318	1.216
B Style	2	183.393	91.696	17.654*
C Handwriting	2	78.771	39.385	7.585*
A&B (Length & Style)	4	25.985	6.496	1.251
A&C (L. Sty. & Hw.)	4	8.741	2.185	0.421
B&C (Sty. & Hw.)	4	7.851	1.963	0.378
A \times B \times C (Length, Style and Handwriting)	8	10.371	1.296	0.249
Within treatment	108	561.000	5.194	
			*P	.01

Findings and Results

The main findings of the study are enumerated as under:

- (1) F. Ratio for the main effect A is 1.216 which has been found to be insignificant at .01. This shows that lengthy answers in history did not affect the evaluation of the examiners at the Post-graduate stage. Therefore, marking criteria seemed to be independent from this factor.
- (2) F. Ratio for main effect B. i.e. style of writing is 17.654 which is significant at .01. This reveals that style in writing the answers of history questions effected the marking of the evaluators. Meaning thereby that the style when taken independently affected the assessment.
- (3) F. Ratio for handwriting (Main effect C) is 7.582 which is significant at .01. This shows that good handwriting effected the assessment of the examiners. It means that the examiners are tempted by beautiful handwriting.
- (4) All the three first order interactions A & B (Length and style) A & C (Length and handwriting) and B & C (Style and handwriting) have been found to be insignificant. This reveals that a combination of these three variables when taken in combinations and permutations do not support any interactional effect.
- (5) The second order interaction $A \times B \times C$ (Length, style and handwriting) has also been found insignificant. This means that these variables are independent of each other. Therefore, the assessment of the examiners is effected by style and handwriting independently.

From the findings, it is inferred that length of answer has no effect on the evaluation of the examiners but two variables i.e. style and handwriting independently do effect the assessment of the evaluators at Post-graduate stage. Therefore, some factors definitely play part at the time of marking answer scripts by the examiners.

Discussion

The investigation evinced that style and handwriting as independent variables may influence the evaluation (assessment) at higher stage. The earlier researches substantiated that good handwriting determines the rating of the teachers at secondary stage. The second variable i.e. style also affects the marking standard of the examiners at higher stage. Further more the history teachers are alleged that they award good marks to weighty answer scripts. The study proves that the examiners do not go by the long answers of the examinees.

However, the standard of marking of the examiners and the method of awarding marks according to their own approach led to some speculation that the assessment of the examiners is subjective. Therefore, the examiners should be made aware of the objective methods of marking. The judgement of the five examiners of higher stage led us to the conclusion that their marking criteria still suffers because of subjectivity. Hence, the examiners should be given sufficient training in evaluation techniques in order to improve the marking standard.

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Bharat Bhushan

STUDENT PERCEPTION OF THE PURPOSES OF HIGHER EDUCATION

Higher education in India is confronted with serious challenges, the symptoms of which have been for sometime now provoking a national debate among those whose business is teaching and all those not directly involved but worried about the drift and the consequences. These challenges have to be met, needless to say, squarely to make higher education more meaningful and purposeful so as to achieve the basic objectives underlying it. Indian University Education Commission (1948-49), says: "Unless we know whither we are tending, we cannot decide what we should do and how we should do it". Higher education needs a clear frame of purposes to make it more meaningful and effective. Purpose of higher education is considered to be something greater like, to mould the mind and character of the coming generation, for international understanding, for social changes and transformation, for national solidarity and unity, to produce experts in various fields and the development of human personality so on and so forth. If there is no such purpose, firstly, educational process will be like a ship moving in vast ocean without having any direction or a goal. Secondly these purposes are based on human values which motivate the learner as well as the teacher to devote their energy and time to accomplish the necessary and desired objectives. Thirdly these purposes give the teacher, the student and the parents, the criteria for the measurement and evaluation of the finished products that come out of the educative process at different levels and various stages.

"Higher education in India is less purposeful innovation than casual change, less inspired initiative than hastily assembled new departures, less far sighted planning than uneven movement",—says Robert L. Gaudino (1965). The aim of higher education at one time, according to D.K. Mishra (1968) was designed to meet the needs of colonial administration with the limitations set by the dominant groups of society. But such is not the case to day. Education now has to establish direct link between educator, national development and prosperity of the community. A.B. Shah (1967) observes, "Education lacked any real purpose in the past, today it is also confused and more wasteful".

This way greatmen and thinkers feel about the purposes of higher education. What about the students of 1980s in our colleges and universities? How many of our students are really intended to fulfil their educational goals successfully? If they are all aware of the purposes then success in higher education is assured. If every student enters into the portals of higher education with definite and right purposes then higher education becomes meaningful effective and the campus becomes calm. So a study to find out the purposes of higher education as perceived by students becomes a necessary and relevant one. This initiated the investigator to conduct the present study.

Objectives: (1) To identify the pattern in the perception of the purposes of higher education by students. (2) To find out the sex difference, if any, in students' perception of the purposes of higher education.

Methodology

Sample: Random sampling procedure was used to select 60 male and 60 female students in Madurai city colleges only.

Tool used: After going through the Commission Reports on Higher education and based on scholarly diseminations, the investigator prepared a check list of sixteen purposes of higher education. The investigator administered the check list to twenty five experts in both academic and non-academic lines for their opinion. Based on the experts opinion four items had to be eliminated from the check list. The investigator re-structured the check list with the remaining twelve items.

Procedure of study: The tool was administered to 120 subjects. The data were analysed by computing the mean of each item to find out the rank list. Further 't' test was used to find out the significance or otherwise of the difference between the mean scores of the two sub groups. The results are giving in the following table.

Table 1

Item No.	Purpose of Higher Education	Rank		mean		S.D.		't' value
		Male	Fe-male	Male	Fe-male	Male	Fe-male	
1.	To get meaningful Employment	1	1	8.36	9.34	2.89	3.06	1.45
2.	Pursuit of Excellence	9	5	5.81	7.03	2.41	2.65	2.04*
3.	To gain Social Status	2	3	8.00	7.46	2.83	2.73	0.99
4.	For Social mobility	8	10	5.84	5.12	2.42	2.26	1.45
5.	To attain professional growth	3	4	7.46	7.40	2.73	2.72	0.90
6.	To foster the spirit of International understanding	12	12	4.84	4.57	2.20	2.14	0.47
7.	For Character Development	5	2	7.03	7.57	2.65	2.75	0.89
8.	To produce Experts in various fields	7	6	6.18	6.48	2.49	2.55	0.30
9.	To develop Leadership Qualities	11	9	5.43	5.19	2.33	2.28	0.48
10.	For Self-Reliance	4	7	7.46	5.83	2.73	2.42	2.69**
11.	For proper utilization of Human potential	6	11	6.21	4.94	2.49	2.22	2.10*
12.	To have rich experience of life	10	8	5.49	5.78	2.34	2.40	2.47

*Significant at 0.05 level.

**Significant at 0.01 level.

Results and Discussion

The table reveals the general trend in the perception of the purposes of higher education among students. It can be inferred that students give importance to the following four purposes. (1) To get meaningful employment. (2) To gain social status. (3) To attain professional growth and (4) For character development. All the four purposes are individual objectives and it is clear from this study that students are much concerned about individual objectives than the national objectives. They give prime importance to employment.

They want their degrees mainly as a passport to get employment. But the educational policy to day is to delink degrees from job certification. This incongruity between students and educational planners should be cleared. Only this controversy leads to student unrest and campus violence.

It is also evident from the table that there is significant difference between male and female students in their perception of the following purposes of higher education. (1) Pursuit of Excellence. Female students are in favour of this purpose. Generally female students are not perturbed with the non-academic problems of students life owing to very many reasons. This gives them time to concentrate on their studies and thus they have every chance to develop some kind of interest in the pursuit of knowledge. (2) For self-reliance—male students favour this purpose. This clearly shows the general independent and dependent nature of male and female respectively. 3. For proper utilization of Human Potential—male students favour this purpose. This ascertains the male student's faith in their potentials and then hope that education could make them to properly utilize it.

Conclusion

So it is evident from the present study that students give importance to the individual purposes of higher education and there is significant difference between male and female in the perception of some purposes.

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P. Joseph Sathiaraj

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Vol. 24, No. 1

Contents

March 1982

Technological Change and Functional Income Distribution Effects in Indian Agriculture:
An Economic Analysis

S. Bisaliah

Farm Size, Irrigation and Intensity of Land Use in Indian Agriculture

G.K. Chadha and R.K. Sharma

Consumption Pattern in Vijayawada

N.J.M. Rao, Raj Vir Singh and R.K. Patel

On Specification of the Pattern of Income Redistribution in a Demand Projection Exercise

L.R. Jain

Profitability in Corporate Sector

(Mrs.) Vishnu Kanta Purohit

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V.D. Divekar

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Communications

WHY RAJU FAILS TO LEARN ENGLISH AND WHAT CAN BE DONE ABOUT IT

The Raju of this article is the young Indian learner of English at College or Higher Secondary School. Here I seek to draw attention to one of the crucial reasons why he fails to profit sufficiently from the English course and to suggest a way of reforming the English curriculum suitably.

A basic law of language learning

It is a truism that any skill is learned by practice: one learns to cycle by cycling and to swim by swimming. One learns a language by using it to understand what others say or write, or to say or write what one means. Of course the learner begins with simple language and goes on to more difficult, but at each level he must himself be using the language in one or more of the four ways: (i) to listen or (ii) read, with understanding; (iii) to speak or (iv) write, so as to convey his meaning. Otherwise no real learning of language can take place.

Basic reason for failure to learn

It is well-known that the typical college student today does little reading, in the first instance. He does not even read his English textbook in the real sense, that is, understanding it himself, as we said above. The *teacher reads* and understands it on his behalf, and then translates it for him (or, less often, explains it in very simple English). Or, again, the teacher gives a lecture or commentary, almost as if the text was from *the Gita* or *St. John's Gospel*. The student does not write; the *teacher* or the author of the bazaar 'guide' *writes* on his behalf; the student merely crams the ready-made compositions and, without much understanding, reproduces them at the examination from memory (or, with better luck or with the connivance of the invigilator, copies them into his answer book). Secondly, he gets few opportunities to practise speaking English, and so there is no question of his learning to speak. The *teacher speaks*. If the teacher speaks simple English in the classroom to explain the reading text, the *student* learns to *listen* to and understand it; in such classes the student *does learn* to listen to simple English, which is surely a gain. It would be obvious that that is all the present system is calculated to teach him.

Whose fault is it?

It is usually supposed by teacher trainers that this is largely due to the teacher's fault and/or the learner's. A simple experiment given below will suggest a different answer.

In the experiment you are asked to read three versions of a paragraph taken from a typical first-year college textbook (which in fact was in use in Gujarat in 1978-79; when I did a year's experimentation with methods and materials in two colleges there). There is no need to name the textbook since the extract is from a much anthologized story by a well-known writer named below in a note. (It is better that you don't identify the story now, but only after you have tried to read the passage). The comparatively difficult words, falling outside a list of 525 easy words and their easy derivatives (prepared at CIEFL), are blanked out in the first version given below. In leading it you will be putting yourself more or less in the position of a hypothetical weak student who does not understand any of the blanked out words. We are certainly not saying that all the blanked out words will be unfamiliar to all the learners; but for the purpose of this experiment we shall assume that there are many learners who do not understand these relatively difficult words. And my own experience tells me that there are a great many learners who are not significantly above this level. Here is the first version of the passage:

Version 1

The _____ of their _____, _____, had reached his _____ which, almost _____ stood _____ and _____ at a _____ from the _____ of houses. _____ his _____ up against the _____ wall of his house, he _____ to _____ the _____ to a _____ of a big wooden _____ in the ground just in front of the doorway.

Our hypothetical learner will find the original passage no more readable than you would have found the version above. It will be evident that he cannot use it for reading as we defined it above, which is reading with understanding.

The number of words assumed to be difficult for the purpose of the above version was 19, in a total of 61 running words: the ratio between the two (or 'density' index) is 1:3.2.

Now let us consider the case of a more advanced learner who will find only 10 of the words difficult. We give a second version of the passage below for reading, with 10 difficult words blanked out: the density index this time is 1:6.1.

Version 2

The subject of their _____, meanwhile, had reached his hut, which, almost _____, stood _____ and _____ at a distance from the _____ of houses. Leaving his _____ up against the low wall of his house, he _____ to tie the oxen to a pair of big wooden _____ in the ground in front of the doorway.

The passage is still too difficult; our hypothetical learner will be unlikely to be able to read it or even attempt to read it with any degree of pleasure.

Now try and read the third version with only 3 blanks: the density index is 1:20.3.

Version 3

The subject of their conversation, meanwhile, had reached his hut, which, almost _____, stood _____ and aloof, at a distance from the neighbouring cluster of houses. Leaving his plough against the low wall of his house he proceeded to tie the oxen to a pair of big wooden _____ embedded in the ground in front of the doorway.

I have tried this experiment with many gatherings of teachers. On the basis of that experience I presume that you found the third version just about comprehensible. You would even

have guessed the broad sense of the third of the blanked out words but not probably of the first two. Incidentally, the common, easy-going assumption that the learner-reader can guess the meaning of a word from its context probably has no more truth in it in general than this particular case suggests. Now let us note that you are a mature reader, with a good sense of English syntax and plenty of experience of reading, which the learners do not have. If one of the blanked out words happened to be a crucial word, even you might be stumped and driven to the dictionary. The typical learner finds a dictionary difficult to understand as much as the above passage—unless it is a bilingual dictionary. But then few people enjoy reading a story with the help of a dictionary, not to mention the fact that few learners actually use a dictionary, because at school and college they have never been made to read—another vicious circle. Michael West found from his long experience with Indian learners that about one unfamiliar word in 40-60 running words (i.e., in 4-6 printed lines) is a suitable difficulty level for detailed study textbooks and 1 and 100 for non-detailed readers. Such books would enable learners to read with understanding and at the same time give them enough new words to learn. A difficulty level of one new word in 20 running words, according to him, would be frustrating to the learner-reader.¹ The conclusion is that the bulk of learners today would find the above passage either impossible to read, or at any rate unsuitable, assuming that they would find three of the words unfamiliar.²

The paragraph we have considered and the typical Indian short story it is taken from are by no means exceptionally difficult from the point of view of language. It is a typical selection for a college textbook, as any teacher can testify. In fact some college textbooks are a great deal more difficult: not long ago, I had to help a college lecturer in a southern university to understand a selection in her English textbook, namely Johnson's 'On Living in a Garret', which I did not find easy either, to say the least. In the end I had to prepare a simplified version of it for the *lecturer's* benefit.

If a reading passage is too difficult, the learners cannot be blamed for expecting the teacher to give a translation or paraphrase. The teachers are not to blame if they teach by the only practicable methods they know, namely translation and lecturing. (By the way, there are other methods, but they would involve a lot of hard word.) This is what you would do if you had to explain a verse from *the Gita* to an audience which has only a smattering of Sanskrit, and for the same reason. The result is the vicious circle we started with: the learner does not read and so he never learns to read and so on. Since the textbook is the basis of most of the speech and written work in the classroom, the vicious circle vitiates the teaching of these skills, too. If one of us, teachers, had to compose an important letter in a language he did not know well enough, he would get it written by someone else. The examination is as important for the learner as that important letter would be for one of us.

Proposals

(i) *Curriculum reform:* How can this vicious circle be broken? Part of the answer is to give the learner what he *can* read, and write about, something simple enough. *Until this is done, we shall not even make a beginning towards solving the problem.* Of course there is no suggestion that this by itself will solve the problem. For one thing the learner must read a lot besides his textbook, own his own: one function of the textbook is to give him a good start for this purpose. But then if it is to serve this purpose, it must be readable enough to give him a that start. And, there are yet other things that need to be done, teacher training and examination reform, for example; but none of these will yield results unless the curriculum is reformed. *To train teachers in a vacuum, as it were, might even be wasteful.* In fact, I mean that a lot of teacher training at present is wasteful.

The proposal to provide easier reading matter for learners may, however, raise eye-brows among the friends of English. They will be realistic enough to admit that little learning takes place now, but worried that things will be worse if standards are lowered.

(ii) *Change the teaching method:* But what we have suggested above is only part of the answer. The rest of the answer is as follows: *if we give sufficiently easy reading materials to*

the learners, the learners can read one lesson in one or two periods or at the most in three periods. At that rate they may be able to cover 40 or at least above 20 lessons in a year, whereas they plod through about 12-14, difficult lessons at present, without learning much in the process. If they can actually read more lessons, the terminal level of achievement, and the over-all objective of the Pre-Degree Course, for example, will not have to be, lowered to any significant extent. Even if it was lowered a little, the actual achievement would not be worse, than now, but better. There would be a net gain.

In short the plan is: (a) begin lower down, at a level more suitable for the learners; (b) increase the pace of progress by making the *learners* read and so (c) teach more in one year than we manage to do now.

(iii) *Experimental evidence:* But can this be done? Our answer is, "Yes". And we have done it. In a try-out of a reading course based on the method, the students read 14 lessons and made about 81% progress in reading efficiency (which includes speed and comprehension) in 22 hours of classroom study.³ We repeated the experiment three times under different conditions and confirmed the expected results. Then we attempted a curricular try-out of the method, in which we broadened the scope of the course to include composition and grammar, towards the creation of a composite course suitable for curricular use.⁴ It must be admitted that we could not maintain the splendid pace of the earlier crash course in reading, partly because of the exigencies of college life and partly because the learners asked for a component of intensive study exercises; still the teachers concerned taught 21 lessons in 100 odd periods, besides teaching composition and grammar. The learners taught us what modifications in our course design were required; and we discovered how much can actually be taught in a year. The resulting course, revised and amplified accordingly is expected to go to the press shortly.⁵

(iv) *A model farm approach:* If we want a breakthrough in agriculture, one of the things we do is to run an experimental farm where new methods and tools can be tried out and their effectiveness demonstrated. Also, when methods are really new, this is the only way the first batch of farmers can be trained. Later the methods are extended widely by influence and/or by prescription. Teachers and administrators should take the initiative to run at least one or two 'experimental/model farms' where not only new methods and curricula (including a new examination pattern) can be demonstrated, but also results. Of course this means that the English Departments concerned should be granted the necessary degree of autonomy. I believe that the University Grants Commission and the English Language Teaching Institutes should assist in any such endeavour; such concerted action could be the beginning of a change for the better. I even fear that without it there may not be any significant change for the better.

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1. See *The Construction of Reading Materials for Teaching a Foreign Language* (Longmans, London 1935); and *Learning to Read a Foreign Language* (Longmans, London, 1941). Compare:
Bilingualism (Bureau of Education, Delhi, 1926).
Teaching English in Difficult Circumstances (Longmans, London, 1963).
My own experience with the *Stairway Reading Course* (Orient Longman, 1978), however, suggests that with enough bilingual glosses learners can cope with a somewhat higher level of difficulty.
2. In fairness, I hasten to note the obvious: this is not the fault of the story or of its, distinguished author, who did not mean it to be used to create educational problems. The story is "Sparrows" by K.A. Abbas (in *Rice & Other Stories*, Kutub Popular Ltd., Bombay).
3. See "Bridging the Gap between School and College—Report of a Try-Out of the *Stairway Reading Course*" (*CIEFL Bulletin* XIII, No. 1 (1977) 37-49).

4. This try-out was held in Manila College and M.D. Science College, Porbander in 1978-79. A forthcoming article will report these try-outs.
5. *The Stairway Remedial Course* in Reading and Writing.

P.T. George

FINANCIAL MANAGEMENT: AN IMPERATIVE TO THE TEMPLES OF HIGHER LEARNING

Finance plays a very important role in all enterprises¹ as almost every activity rotates around it hence its management and control is considered one of the most vital issues by the business managers. The exigency for adopting a system of Financial Management in the educational institutions arises because of a number of factors.

The emperical studies in Business Organisations have proved that an effective system of Financial Management within the Business Organisations has fetched in profitable results to the enterprise and has contributed, to a very great extent, towards the achievement of the objectives of the organisation. It may therefore be not much wrong to apprehend that a system of Financial Management, if adopted in the Universities will help them solve some such problems which are becoming stalemate day by day such as the problem of inadequacy of Finances, the problem of excessive overdrafts etc.

Secondly the educational expenditures are now regarded as investment in human capital for the national development. This approach to education has aroused suspicion in the minds of investors as regards profitability and effectiveness of their investment. As most of the educational programmes are financed out of the public exchequer, the burden of educational expenditure on the shoulder of the government and ultimately on the common public is increasing by leaps and bound² and there is still a constant demand for more and more resources so as to cater with the needs of the development. This rapidly increasing demand for more and more resources, at one end, requires the exploration of further avenues, while on the other hand, requires that the existing resources should be exploited in such a manner so as to render maximum service to the society which can only be assured when there is a proper system of controlling and using the resources of the educational institutions.

Quite attached to the factor mentioned above, there is another factor which in itself is sufficient enough to justify the demand for the implementation of Modern Techniques of Financial Management in Universities, College etc. The resources which these institutions use are scarce having a number of alternative uses and it is the duty of the nation to put these resources in the most profitable alternative and in the most appropriate and efficient manner so as to ensure maximum benefit to the society.

The various reasons mentioned above coupled with the deteriorating and stagnating conditions in our temples of higher learning³ urge for the immediate implementation of a system of Financial Management but it is unfortunate that no concrete attempts has so far been made in this regard. Though the necessity for modern managerial techniques has been emphasised in a number of seminars and in the Orientation Programmes for the Finance Officers and Registrars organised by the 'National Institute of Educational Planning and Administration (NIEPA)' 'Regional Office of the UNESCO' Bangkok, and 'International Institute of Educational Planning (IIEP)' Paris, but the introduction of such techniques in our universities has been avoided on one pretext or on the other.⁴

Sometimes doubts are raised as regards the adaptability of Modern Managerial Techniques to the educational institutions particularly on the ground that these are the distinct types of institutions established and run for the purposes of acquisition and dissemination of knowledge and require complete degree of autonomy. It is argued that because of their distinctive character the modern managerial tools may not suit to them.⁵ Moreover the output of educational institutions are almost unmeasurable in quantitative terms and in some cases they are even undefined, thus obstructing the implementation of

Modern Management Techniques as quite a few techniques of modern management require the measurement of performance in quantitative terms. Such doubts are genuine and can't be overlooked while coming upto any conclusion in this regard. But so far as the Financial Management is concerned there arises no such question. Though it is true that Finances have bearing on almost all activities of the enterprise, it is also a fact that they can easily be separated from the rest of the activities of the enterprise without causing any harm to the enterprise. Besides, the Financial Problems of a University or of a college is not much different from the Financial Problems of a business organisation. Like any Financial Manager of a business concern, Finance Officer or treasurer of a University or College is also faced with the same type of problems such as How to Finance a particular educational programme? How to make a balancing between the resources available and the demand for it? How to meet out the day to day financial obligations? and How to optimise educational expenditure so on and so forth...

Financial Management, as is meant by it generally, implies a sub-system entrusted with the task of managing and controlling the Financial aspect of the total organisational system. Broadly speaking the system of Financial Management performs the following functions:

Planning and anticipating the future requirements of the fund in order to achieve the objectives of the enterprise; finding out the most appropriate source of raising the required amount of finances; planning and controlling the regular inflow and outflow of cash; and finally to guard the funds of the enterprise and watch that the funds are being used in the most economical and optimal manner rendering maximum return to the enterprise. The finance function may either be circumscribed in the classification given by Henry Fayol viz. Planning, organising, staffing, co-ordinating and controlling or they may be given the behavioural touch as emphasised by Elton Mayo⁶. In business organisation the finance functions are performed to fulfil the double purpose. It, on one hand is performed, to finance the development programmes where the Financial Managers are basically concerned with the task of planning as regards the most appropriate source of Funding that programme; while on the other hand these functions are performed to ensure that the resources available with the enterprise are used in economical and efficient manner. In case of Universities and Colleges it appears that the Finance Officers or the bursars have been relieved of the task of choosing the appropriate alternative for additional resources as the government and other concerned agencies have assumed the responsibility of providing them with necessary funds whenever required thus leaving them mainly with the task of planning and controlling the existing resources which have been put under their disposal. It may however be noted here that in case of some special sponsored programmes organised by the University or college itself the finance officers are also supposed to perform the task of planning and choosing the most appropriate source of Finances.

If we look in this perspective, an effective system of Financial Management in the Universities requires a well developed system of Accounting, auditing, costing and a system of Management Information service. Unless these pre-requisites are complied with no system of Financial Management can bring in fruitful results because these are the sub-system of the system of Financial Management and are the integral part of it. Therefore the first step in the introduction of Financial Management in Universities and colleges should be the development of an adequately efficient system of Accounting and its authentication. The existing situation in universities in this regard is almost unsatisfactory. There is found great diversity in the methods of keeping the accounts within the universities. Moreover the method which is currently in vogue are outdated and do not fulfil the objectivity criterion of the modern accounting principles. It may be suggested in this respect that an accounting manual or code of accounts should be chalked out either by the U.G.C. or by the Association of Indian Universities or by the respective State Governments, and universities should be required compulsorily to adhere to the provisions of that manual. Such a manual should be comprehensive enough and must ensure that the accounting records so maintained must provide; (i) a historical record of the receipts and payments; (ii) basis for evaluating the faithfulness of stewardship and (iii) basis for fiscal and educational

management with respect to budget operations control, cost analysis and reporting.⁷ The accounting records so prepared should also enable the finance officer or the executive of the university to budget, programme, and evaluate the resources processes and effectiveness of various objectives of their enterprise. It should also help them in purposeful classification and meaningful analysis of the required information for higher level decision making.⁸

One method of account which may suit the special requirements of educational institutions is the 'Fund Accounting'. Fund Accounting is no new invention in the science of accountancy but it is just an extension of Accounting practice making it more suitable and adaptable in particular cases. The concept of fund accounting implies that accounts should be classified 'Fund-wise' or the 'Function-wise' and has been found relevant in such organisations where receipts are usually earmarked or provided for certain specific purposes. The case of our Universities is no different as they often receive earmarked grants from U.G.C., State Governments and other concerned agencies like CSIR, ICHR, etc. The universities are required to utilise a particular grant specifically and exclusively for the purposes it has been provided for. The Fund accounting may help the auditor as well as the authorities of the universities to know whether the regulations of the agencies providing finances or of the Finance Committee of the University itself are being adhered to. This may also keep the authorities informed continuously about the position of each fund.

Accounting system no matter how efficient and capable, must also be supported by a competent machinery of auditing so as to ensure that accounting records of the institution are authentic and depict the true and fair view of the state of the affair of the institution. Not only that but a number of new dimensions have also been included in the objectives of the audit and auditors are also required to make propriety and efficiency audit wherein they, apart from simple verification and vouching, also look into details whether the policies and rules framed by the institution have strictly been adhered too and whether efforts have been made to economise the expenditures.

The existing arrangements for auditing the accounts of educational institutions are competent enough to fulfill the various needs of auditing. Under the present set-up the Government Auditors have been entrusted with the task of auditing the accounts of Universities and colleges. But the position of colleges is a little different because most of the colleges are managed by the 'societies' or 'trusts' which in themselves are treated as person for the purposes of taxation as such they are, under the provisions of Income Tax Act 1961, also required to get their accounts audited by a certified Chartered Accountant. It however appears that the Government Auditors usually resort to simple verification and vouching in order to establish the authenticity of the accounts. It, therefore is required that emphasis should also be given on propriety and efficiency audit so that the normal functioning of Universities and college should be improved.

Closely connected with the concept of Accounting and Auditing, there lies another concept; the concept of 'Internal check' which is considered the backbone of efficient financial organisational structure. Since the system requires no additional financial involvement as it is simply the "allocation of work amongst the existing staff in such a way that work done by one person is automatically checked by another in the line without coming to the knowledge of anybody that he is being checked upon," it receives high priorities in Business Organisations. Though this system has already been adopted by the universities and colleges but in most of the cases it is found that it has led to unnecessary delays and has obstructed the smooth functioning of the organisation. It therefore seems urgent that the system be improved at the earliest.

The concept of 'Cost and Management Accounting' is no less important than the concept of Financial Accounting and Auditing. If the Financial Accounting helps to know the present picture of the organisation the 'Cost and Management Accounting' helps the authorities take prudent decisions, as it provide them a basis for the evaluation of their past performances as well as the present policies. Looking in this perspective, it seems necessary that the organisational structure of the universities and colleges must provide for an efficient system or machinery for the 'Cost classification and Costing' so as to enable

the authorities know objectively about the past performance of the enterprise. The cost and management accounting in order to become more effective must be followed by a 'Management Information Service (MIS)' which will ensure the regular and unobstructed flow of information to the decision making authorities. In some of the business organisations particularly in Europe and America the MIS has become too computerised to give impression that MIS means a computerised and highly technical device for processing, classifying and channelising the information toward the management in accordance with their requirements and specification. But MIS simply means any system not necessarily computerised or highly technical, which, considering that all statistics are not information, infers relevant information out of the pool of the statistics and assumes the responsibility of communicating them to decision making authorities in order to keep them abreast of the affairs of the organisation.

The importance of MIS can not be overlooked particularly in those organisations where democratisation of control and decision making process is given more importance as we find in case of our universities where decision making authorities are not single individuals but a group of individuals.

Once the infrastructure for the Financial Management is ready, the modern techniques and tools of Financial Management can be implemented in the temples of higher learning and can of course, be expected to render all those benefits which profit making organisations are reaping from the Financial Management. As has been mentioned in the very beginning in this paper that the Finance officer of a university or the Treasurer of a college is concerned mainly with the task of efficient utilisation of the available resources in pursuance to the policies and guidelines framed by the Finance Committee or the Management Committee of the Institution itself or by the agencies providing finances, he should concentrate his attention to this aspect particularly. But he should not forget that his duties also include the alround development of the institution.

A brief discussion of various techniques which may be used in educational institutions with ease and advantage are as follows:

Budget's and 'Budgetary Control' is one of the traditional techniques of Financial Management and is still considered the most effective one. The success and failure of a budgetary planning and control depends upon the calibre with which the budget has been prepared. To quote Morphet and Johns—"The budgetary process may be nothing more than ascertaining the revenue that will be available and allocating it in such a manner so as to minimise the complaints. On the other hand the budgetary process may involve carefully studying the educational programme and planning the procurement of necessary revenue to implement the educational programme agreed upon. The latter type of budgetary process has been found more effective in promoting the development of adequate educational programmes.

The process of budgeting and budgetary control can be carried to the highest level where it may be necessary to use further sophisticated techniques of analysis such as. 'Operations Research'. In this regard the following relationships have been established between educational programmes and the Financial inputs.

(1) If additional financial input will increase the individual and social benefits of the educational system more than the amount of investment, the financial inputs should be increased accordingly.

(2) If the same individual and social benefits of educational system can be produced on a smaller financial inputs then the financial inputs should be reduced accordingly.

(3) If the university administration unit itself or the individual colleges within that university are too small to achieve the economies of the scale necessary to maximise the educational benefits, per rupee of input, the educational system should be re-organised accordingly.

(4) If organisational structure does not function efficiently and effectively to maximise educational benefits per rupee of input, it should be modified, and

(5) If any educational policy or programme or operation is dysfunctional, ineffective or inefficient it should be changed.

If circumstances permit, the budgetary process may further be made effective and newer system of budgetary control such as 'Performance Budgeting' and 'Zero Based Budgeting' may also be adopted. There are various other techniques of Managing the financial aspects of the organisation which are being currently used in some of the American Universities. These techniques include, The Planning Programming Budgeting and Evaluation System (PPBES) Management by Objectives (MBO) and Planning, Evaluation and Review Technique (PERT) or the Critical Path Method (CPM).

Besides budgeting in general, the particular aspects of Financial organisation like cash, receivables, debtors and creditors etc. should also be made subject to the planning and Budgeting and tools like 'Cash Flow Statement' or 'Fund Flow Statement' should also be used.

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Furqan Qamar

POWER, INVOLVEMENT, AND ORGANIZATIONAL EFFECTIVENESS

Power has been viewed by theorists in the conservative tradition as a positive force promoting order, peaceful coexistence, and effective collective action. Radicals, however, have regarded it as a disruptive force having dysfunctional effects on organizational struc-

tures, processes, and outcomes. This study contends that the conservative and radical viewpoints can be synthesized, provided that power is conceived as a non-normative continuum. Such a conception would permit the identification of several concrete power behaviours and the simultaneous examination and explanation of the differential effects of those behaviours.

This study sought to examine the effects of three administrative power behaviors—coercion, authority, and influence—on organizational effectiveness. Subordinate job involvement was hypothesized to function as an intervening variable between the causal variables, the power behaviours, and the end-result variable, organizational effectiveness. Several relevant demographic variables were also included in the model. Seven private colleges in Andhra Pradesh, with a total population of 395 faculty members, participated in the study. Valid responses were received from 94.18% of the faculty members.

Three research instruments were developed to measure faculty perceptions of power, involvement, and effectiveness. Two factor analytic procedures and the computation of Cronbach's alpha provided accurate estimates of the relatively high levels of reliability and construct validity attained by the three measures.

The Pearson r , part and partial r^2 , standardized regression coefficients, path analytic effect coefficients, t and F ratios were some of the statistics used in the analysis of the data. The following were the major findings of the study:

(1) Authority did not emerge as a significant power factor; coercion and influence accounted for 93% of the total variance in the data.

(2) In the colleges studied, administrators' use of influence was more prevalent than their use of coercion.

(3) As hypothesized, coercion and influence were inversely related.

(4) No significant relationship between coercion and involvement was found in bivariate as well as multivariate analyses; influence, however, related positively to involvement, as hypothesized. Path analysis results supported involvement as an intervening variable between influence and effectiveness.

(5) The hypotheses that associated effectiveness negatively with coercion and positively with influence and involvement were confirmed.

(6) Analysis of the relationships that existed between coercion and the demographic variables revealed that senior and high-ranking academics rated their administrators higher on coercion than their junior and low-ranking colleagues. Increase in faculty size tended to reduce somewhat the negative impact of coercion on faculty members. Women rated their administrators slightly higher on both coercion and influence than men. Roman Catholic colleges were rated higher on administrative use of influence, faculty involvement, and college effectiveness than non-Catholic colleges. Faculty members who were married reported higher levels of job involvement than the singles, the priests and sisters. Senior faculty members rated themselves higher on involvement and their colleges higher on effectiveness than their junior colleagues.

(7) Barring a few exceptions, the demographic variables explained statistically significant but relatively small portions of the variance in coercion, influence, involvement and effectiveness.

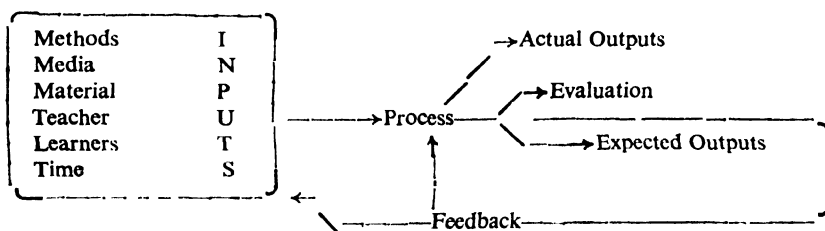
M. Devadoss

EDUCATIONAL TECHNOLOGY IN HIGHER EDUCATION

Educational Technology provides a systems approach to education and it consists of the application of the principles of physical and behavioural sciences in the educational process to make it effective in terms of the attainment of objectives. It looks upon education as a system consisting of various sub-systems that exist and function in relation to each other and achieve certain objectives. Any change or modification brought about in one or more of the sub-systems would affect the achievement of objectives. Educational technology with such

a systemic approach utilizes various applications of scientific principles in organizing the educational process. These applications may be from physical sciences or behavioural sciences. Television, radio, projectors, audio-tape recorder, video-tape recorder, etc. are a few components which are applications of physical sciences while, seminars, programmed learning material, team teaching, lecture, etc. are applications of behavioural sciences. Even though many of these instructional components have been in use since long, the logic and perspective with which they are seen and utilized in education in recent times are different. In the process of educational technology, in order to achieve each and every objective of instruction, one or more instructional components are selected and sequenced leading to the systematisation of the educational process. For example, if the objectives of instruction in a particular context are providing basic knowledge and developing certain skills, the educational system will have to incorporate the components like lecture and practical work respectively. In fact, most of the instructional situations would aim at a number of instructional objectives ranging from providing basic knowledge to development of attitudes. Hence, any one method of teaching would not suffice in attaining all these objectives. A method like lecture may have the potential to effectively provide basic knowledge to students, while it would be redundant in the development of laboratory skills. Similarly, library work may be quite suitable for better understanding of the concepts provided in the lecture whereas methods incorporating group interaction, like discussion, seminar etc. would be necessary to develop higher cognitive abilities like critical and analytical thinking, synthetic ability etc., and affect attributes like attitudes, interests, appreciation etc. While a lecture can be quite effective in communicating verbal stimuli, a projector may be utilized to communicate visual stimuli. Further, use of a gadget like an audio, tape recorder comes handy in recording an effectively delivered lecture for further use. Thus, educational technology necessitates the selection of various appropriate methods and media according to the predetermined objectives leading to the systematisation of instruction. Such a process of systematisation may be better clarified by the following model:

Input-Output Model of Systems Approach to Education



This model helps to understand the process of systematisation in instruction. A thorough understanding of the various objectives of instruction facilitates the selection of various instructional techniques. In such a relationship the objectives may be seen as, expected outputs and the instructional techniques and gadgets along with the teacher and learners as the inputs. These inputs function in an integrated style and bring about certain behavioural changes in the learners. These behavioural changes are the actual outputs of the system of instruction. The extent to which the actual outputs coincide with the expected outputs speaks of the effectiveness of the instructional system. The deviation that may exist between the expected and actual outputs provide the feedback which helps to rethink about the selection and the organisation of the inputs. Such a model may be called as an input-output model of systematisation of instruction. The following sections deal with in detail systematisation of instruction at higher education level.

Systematisation of Instruction in Higher Education

Higher education stands for identifying a select group of individuals in the society and helping them to develop physical, intellectual, emotional and social aspects of their personality to the full. These individuals should cultivate through higher education competencies required to take up leadership roles in various fields in the society. They are expected to develop the right attitude, and independent and creative thinking to enable them to seek and cultivate new knowledge and pave the way for social progress. Keeping in view these broad objectives of higher education, the instructional experiences provided at, various stages, viz. graduation, post-graduation and research, should strive to (1) provide knowledge and understanding regarding various disciplines, (2) develop higher cognitive abilities like critical, synthetic and evaluative ability, (3) inculcate certain affect attributes like healthy attitude, democratic outlook, social sensitivity, and humanitarian values, and (4) develop certain skills which would be cognitive, affective as well as psychomotor. With slight differences these instructional objectives would remain same irrespective of the levels, subject variations etc.

A critical persual of the various instructional objectives of higher education mentioned above on the light of the concept of educational technology would indicate that any one method or medium will not be having the potential to achieve all the objectives. For example the most widely used method, lecture, even though will be effective to provide basic information and to some extent understanding in the students, it will have very limited or no potential in achieving other objectives. To cope with the ever increasing generation of knowledge, the students will have to continually go through books and journals in the library. For developing higher cognitive abilities and affect attributes a student will have to experience interactional situations through techniques like discussion, seminar, debates, simulation, brainstorming etc., while the inculcation of various types of skills would be more effectively developed through techniques like practical work, field work, community centred activities etc. Such an attempt to select and sequence instructional experiences keeping in view the objectives of instruction at higher education level would form the core step towards systematisation. Systematisation of instruction at higher education level would not only consider the instructional objectives at that level but also takes into account certain characteristics related to the learners, resources, subject matter etc.

These characteristics are peculiar to higher education in general and Indian context in particular. The present section deals with some of these characteristics. An understanding of these would provide insight into the ways and means of achieving effective systematisation.

Cognitive development of learners: Generally the learners entering the higher education institutions after their higher secondary or intermediate course would have passed the age of 17 or so and may remain in the institutions for 3 to 5 years or more in certain cases. Thus, it may be said that these learners are in late adolescents or early adulthood. This would mean that this group of learners would be cognitively superior to those at school level as they would have developed certain higher cognitive abilities. Individual at this age group shows capability in dealing with various viewpoints of others making, objective judgements of the views and arrive at ones own evaluation. Overall thinking of such learners would be more abstract than that of the child. They think in verbal and symbolic terms showing ability to deal with intangible, infinite or imaginary things.

It is necessary to consider these cognitive characteristics of the learners while learning experiences are selected and organised in higher education. Limiting the instruction to only teacher oriented methods would not satisfy these needs of the learners. Instead, interactional experiences where the learners would not only get the opportunity to be exposed to various viewpoints of the group members, but also express ones own opinion, should find significant place in instruction.

Increment in Enrolment: An examination of the university enrolment at Graduate and Post-graduate stages over the last three decades would show that there is a steady increase in the students enrolled. While in 1950-51 there were only 1,73,696 students enrolled all over India in the universities and colleges, by 1980-81 the enrolment figures reached as much as 27,52,437. This amounts to 15 times increase of enrolment. However, the annual growth rate shows a steady regression and as predicted by Sharma (1977), the trend would continue. Similarly, it is also predicted that the enrolment may reach a figure of 59.3 lakhs by 2000. It may be interesting to examine the corresponding increase of universities and colleges in post-independence period. During independence there were 21 universities and 533 affiliated colleges including professional colleges. By 1980-81 the number increased to 123 universities including deemed universities and 4,722 affiliated colleges including those for professional courses. A comparison of the increase in enrolment and increase in the institutions of higher education over a period of about 30 years would show that while the enrolment increased by about 15 times the institutional increase was only about 6 times in the case of universities and about 8 times in the case of colleges. This implies a tremendous increase of average enrolment in institutions of higher learning. However, it may not be concluded that this increase can be expected in all courses. In certain courses, the number of students are very large whereas many newly introduced and specialised courses may have very less number of students. This reflected a variation in the number of students from course to course. Such a variation would be a significant criterion in the selection of methods and media.

Heterogeneity of learners: India is a country of diversities. These diversities are in terms of caste, language, socio-economic status etc. These variations naturally are reflected in the learners groups also and they bring about stratification in these groups. Such a stratification is in the increase due to increased enrolment brought about by the factors like aspirations of the masses for higher education, constitutional provision for facilities to lower classes, and castes, more and more acceptance for women's education, etc. Apart from the socio-cultural and economic factors, variation in cognitive abilities as well as affect attributes of the learners, which are effected by the increased enrolment, also becomes an influencing factor on stratification. This stratification implies heterogeneity in the group of learners and such a heterogeneous nature comes as an important criterion for deciding methods and media.

Content Variations: At higher education level courses of various streams and specialisations are organised. Such a variation in courses is in the increase due to the evolution of inter-disciplinary courses, tremendous increase of generation of knowledge under different disciplines as well as increase in newer applications of the existing knowledge. Certain courses may be very theoretical in nature and would involve abstract thinking and logical reasoning, whereas certain other courses may be applied in nature and would involve more and more concrete experiences. A few other courses may be such that the emphasis is more on creative thinking and affect attributes. These variations in the nature of contents would also decide the type of methods and media to be selected and utilized.

Availability of Resources: Resources utilized in an institution may be classified into three types—financial, manpower and natural. The smooth and effective organisation of institutions of higher education depends to a considerable extent on the availability of these resources. In a developing country like ours the financial and manpower resources are quite limited in almost all the institutions. The limited financial resources curtails the availability of various facilities required for better academic functioning of the institutions. There exists a wide variation of distribution of financial resources available to institutions due to the variations in budgets of central and various state governments and other voluntary financial agencies. Similarly man-power resources also vary from institution to institution depending upon the factors like nature and management of institution, location of the institution, etc. Further, the type of natural resources available to an institution depends

on the environment in which an institution is functioning. In this regard, variation can be easily expected according to the differences like industrially developed and underdeveloped regions, rural and urban areas, thickly and scarcely populated parts etc. Such variations in financial, manpower and natural resources available to an educational institution forms an important criterion in deciding suitable instructional methods and media. For example, institutions where the physical facilities are very meagre, use of sophisticated hardware may not be feasible. Similarly institutions where the manpower resources are limited more and more self instructional material may be made use of, by which the students would be able to learn on their own.

The various characteristics of Higher Education discussed in the preceding sections influence the instructional system to a great extent. Hence, systematisation of instruction at this stage should naturally take into account these characteristics. Thus, they form a set of considerations, apart from the objectives to be achieved, for selecting and sequencing the methods and media in systematisation of instruction.

Instruction through Non-formal System of Higher Education: Due to the increasing enrolment in Higher Education alternative streams of providing instructions have emerged in India in recent times in the form of Correspondence Courses, Open University, etc. These programmes may be seen as non-formal system of education due to the extent of flexibilities provided, like flexibility of schedule, location, entry points, instructional inputs etc. In India, at present, 22 universities and a few other higher education institutions organise such a system. Unlike the formal system of education the non-formal system characterises limited teacher-student contact and student-student contact, far distance between the institution and the learners' place of residence, heterogeneity in the learners characteristics such as age, occupation and socio-cultural background etc. Such a phenomenon would demand increased flexibility in instructional system necessitating the utilization of alternative instructional inputs. Instructional inputs like various types of self-instructional materials, mass media like radio and T.V., individualised assignments, library-based learning experiences, structured discussions, postal contacts between teacher and the students etc. are utilized in non-formal system of education. However, systematisation of instruction would require the use of these instructional inputs with a systemic perspective.

Systematisation of Evaluation at Higher Education: At any stage of education, so too at higher, evaluation aims at judging continually the extent to which various objectives have been achieved by the learners with a view to utilizing this information in providing feedback to them. Also, it is used in arriving at value judgement of each of the learner's performance, leading to grading and certification. If these objectives of evaluation are to be achieved, suitable techniques of evaluation should be incorporated in the light of instructional objectives. Further, for attaining reliability of measurement in evaluation items under various techniques should be systematically developed and utilized. With that background innovations in evaluation which have emerged recently like internal assessment, evaluation banking, objective tests, grading etc. should be examined for their utility and placement and utilized in an integrated manner. Incorporating one or two of such innovations in an isolated fashion may not bring about the desired effectiveness in evaluation. For example, internal assessment takes care of evaluation of the students and provides the opportunity to the teacher for the utilization of various tools and techniques such as observation of discussion and practical work, assignments, anecdotal recording, paper-pencil and oral tests, etc. leading to comprehensive evaluation banking makes the developments and selection of evaluation items and preparation of question papers more effective and scientific, and grading makes the judgement about the learners performance more idealistic. Utilization of these procedures in evaluation should be seen in the light of emerging innovation of semester system in higher education. It is needless to say that semester system demands the organisation of instruction as well as the evaluation by the group of teachers who are incharge of particular course. This would mean that the teacher or group of teachers would be responsible for evaluating the

students, making use of various innovations in evaluation, in an integrated manner leading to systematisation of evaluation.

Role of Teacher in Instruction at Higher Education Level: At higher education level, especially with reference to semester system, a teacher or a group of teachers should manifest a two-fold role. In the instructional system teacher forms an important input. He has to provide varied types of learning experiences like lecturing, directing a discussion, operating instruments and demonstrating etc. Apart from acting as an input he shoulders the responsibility of judiciously selecting various methods and media according to the instructional objectives visualised and sequencing them leading to the formation of development of an instructional system. In this function the teacher goes beyond the role of an input and manifests the role of the organiser of an educational system; or in other words, he may be called as a systemist. Educational technology necessitates the teacher to take up both these roles with equal effectiveness in order to achieve systematisation.

Feasibility of Educational Technology in the Institutions of Higher Learning: In colleges and universities the most popular method of teaching today is lecture. The popularity enjoyed by lecture is not because of mainly its effectiveness but its ease of utilisation and historicity. However, as discussed earlier, the varied objectives of instruction can be achieved by use of variety of techniques with a systemic perspective. The present system of higher education has a number of limitations which come in the way of incorporation of different methods. The increase in number of students in a class, their heterogeneity, high student-teacher ratio, lack of enough facilities, etc., seem to compel a teacher to adopt mainly lecture method. It is contended here that by reducing the number of hours for lecture, which can be done effectively by making the lectures precise, the teacher should be in a position to use the instructional time generated in utilizing other techniques of instruction which are suitable for achieving certain objectives. Moreover, lectures which are mainly intended to provide basic knowledge to the students can be effectively replaced by suitable self-instructional techniques which the learners would learn outside the class hours. Use of such self-instructional techniques becomes significant in the light of the personality set up of the students at higher education level. Apart from the self-learning material and/or lectures, as the case may be, which are used for providing the minimum required knowledge to the students, it is required that they go beyond the minimum knowledge by browsing through additional sources of information in the library or otherwise. It would be interesting to see how a self-learning material alongwith techniques like discussion, library work etc., can be utilised to provide instruction even to the groups of larger size. While self-learning material can be given to each of the students irrespective of their number, for organizing discussion, division of larger group into smaller sections would be necessary. This apparently seems to be non-feasible in consideration to number of periods provided and the limited accommodation available. However, this difficulty can be overcome by organising discussion session in one half of the group while the other half could be involved in library work and vice-versa.

Instructional materials incorporating self-instructional techniques can be planned and developed and tried out for its effectiveness in small groups of students. Modifications according to the feedbacks received from the tryout can be carried out and these may be utilised on a large scale in all the institutions following same course outline. If for different courses such material can be developed, this would go a long way towards systematisation of instruction in different courses. This should not mean that the material would be used in the same way in all institutions. Minor changes, if necessary, can be carried out according to the environmental conditions or ingenuity of the teachers. For the evolvement of such material a few leading institutions in an university should take the initiative and the achievements made in these could be extended to other institutions also.

It may be said that what is lacking in the present system of instruction in higher education is not just the non-utilisation of various techniques and gadgets for instruction, but a complete absence of conviction with regard to the effectiveness of many such tech-

niques on the part of the teachers and other personnel involved in instructional planning and organisation. Inculcation of such a conviction may be achieved by making the teachers know more about the significant objectives of instruction at higher education level, the techniques which could be used to achieve these objectives, the roles they have to perform in selecting these techniques according to objectives, logically sequencing them and thus bringing about systematisation of instruction.

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Book Reviews

The Higher Education System: Academic Organisation in Cross-National Perspective by **Burton R. Clark**, (Berkeley: University of California Press, 1983) pp. 315.

Burton Clark in his study has rightly pointed out that although the emerging serious literature on higher education throughout the world has reasonably enriched our perspective of the higher education system with richer ideas and facts, the situation still leaves much to be desired. In many respects the literature is fragmented and this is largely because scholars tend to be, and are still, more discipline oriented. Study and research in higher education issues were considered to be non-disciplinary in nature. Therefore, attention was only centered on immediate problem areas in higher education for which immediate solutions were being sought.

Clark in his study attempts to improve the state of the art by detailing systematically how higher education is organized and governed. Firstly, he sets forth the basic elements of higher education system, as seen from an organizational perspective. Secondly he attempts to show how these features vary across nations, with fateful effects. In order to achieve his main objective, Clark confronts the common and varied structures and procedures of higher education in existing literature. This literature is selected

largely from studies of higher education system in post-industrial societies, namely, the United States of America, the United Kingdom, Sweden, Japan, Italy and the Federal Republic of Germany and only to a lesser extent from studies of developing societies like Poland, Mexico and Thailand. Using this data Clark creates general categories and then goes on to identify the basic elements of higher education as it operates in this cross-cultural framework.

Clark points out that a cross-cultural comparison is particularly advantageous as it uncovers the unique features and unconscious assumptions that possess our vision when we study only a single country, generally our own. This is largely because as Clark points out, the "home-town" view—in particular of the American higher education system which is fundamentally a deviant case distorts one's perspective of the study of the higher education system. Clark also emphasises that the brute realities of national differences restrain a normative dogma. Therefore, to Clark it makes sense to know what is in place and how the future is thereby figured for others who are as rational as the Americans, before applying judgements on what ought to be done in higher education at home and abroad.

The culling out of these basic features of the higher education system according to the author will enable us to perceive in

depth how the system itself determines action and change. According to Clark, though such an approach will constrain the analyst from imputing the influence of the immediate societal environment on the system, he points out that this approach "is increasingly compelling in social sciences as large sectors split off as major specialities with their own constraints and imperatives". (p.2) Clark reinforces this argument of his by using Ralf Dahrendorf's remark that "certain areas of human activity have evolved their own action patterns". (p. 2) In other words, a sectoral hegemony has developed in major specialities. Clark points out that unlike elementary or secondary schooling, science, scholarship and higher education have autonomies. In particular, Clark suggests that "the last century has seen the higher education system mature as a relatively independent sector of modern societies". (p. 2) He contends that it is freer from societal control including political control. In spite of the current widespread impression that higher education is increasingly interdependent—with other parts of society—and thereby heavily dependent—Clark suggests that there is a virtue in seeing the higher education system as one that has developed its own massive structures and bounded procedures that provide some insulation and strengthened hegemony over certain tasks and functions.

As a result of this form of institutional development, Clark says that the power groups within the higher education system have the capacity not only to shape their immediate work environment but also to affect the world. In other words, according to Clark, a vast professionalization of academic activities is involved which receives material and symbolic rewards. When this professionalization converges with bureaucratization in fashioning large organizations, powerful social actors are thereby produced. To Clark, this phenomenon too, prevails in higher education. Therefore, Clark points out that his emphasis will be "an internalist perspective that concentrates on the institutional framework, the regular organization that supports, perpetuates, and indeed helps to create the intellectual momentum". (p 4) Though Clark recognizes that modern organizational theorists have evolved a framework which has suggested that as far as

possible the boundary between an organization and its environment should be dissolved, he still underplays this empirically useful phenomenon. He points out that in higher education the boundaries of the system is so problematic that "it makes sense to focus on the capacity of well-located groups to use parts of the system for their own purposes, examining them without much concern about where they sit on the two sides of an arbitrary line" (p 6).

Using this broad outline and conceptual framework, Clark tries to excavate the higher education system's basic structure. To do this, he embarks upon a cross-national perspective of the higher education system by focusing discussions evolved around "five generic questions" about academic systems in largely post-industrial societies. They are namely: arrangement of work, maintenance of beliefs, distribution of authority, integration of systems, and changes. Clark's contention is that the answers to these questions will lead towards systematic answers to issues, like what determines access, how general education can be supported, how higher education can be further democratized and how the integration of teaching and research can be maintained in systems of mass higher education. Clark then narrows down his findings and points out that all these issues are heavily conditioned by the structural bases of the higher education systems pursued in his study. He adds that each of the systems have macro constraints and compulsions that affect action up and down the line of the academic organization. For example, the European professional chair and the American department shape teaching roles into different moulds. The structure and organization at undergraduate and graduate levels in the United States make American student life in its national setting different from that of other countries.

This study, comprising of eight chapters which seem to some extent to be essays in themselves, begins with a detailed examination of the special nature of knowledge around which the activity of higher education is organized and revolves. With knowledge as the starting point Clark in the next three chapters takes his analysis towards three other basic elements in the higher education system. They are firstly work i.e. the way tasks in academic organizations are conceived and

arranged along disciplines and institutions; secondly, belief i.e. the primary norms and values of the various individuals who man the system; and lastly, authority i.e. the distribution of legitimate power within the system. Clark points out that "around knowledge specialities, each national system develops a division of labour that becomes traditional, strongly institutionalized, and heavily influential on the future," while "on the institutional side, national systems have evolved quite different structures, necessitating a scheme that allows us to systematize the alternatives of differentiation and identify a handful of patterns into which countries fall" (p.6). According to Clark academic organizations in different locations have a rare ability to generate strongly influential tradition of beliefs. Most of the relations of power that are generated from the system have taken their roots from knowledge specialities, the influential tradition of beliefs and the academic work organization itself. In chapter 5 Clark examines how the higher education system is integrated to the state and the market. In the next chapter he turns to change. Clark is concerned here with the extent to which existing forms within the system contribute to change. In particular, he emphasises that the constraints and imperatives inherent in the ongoing structures of work, belief, and authority have to be studied to understand change realistically. Also, changes due to cross, cultural influences have to be taken into consideration, says Clark. In the final two chapters Clark moves to a normative posture. He concludes that the clash of values in the higher education system needs considerable trade offs and hence, adjustments.

On examining the higher education system of many Third World countries, we note that the universities in these countries as academic organisations have several of the unique features, basic elements and patterns which Clark has excavated and outlined in his cross-national study. Third World universities are essentially teaching institutions. They are basically organized to revolve around core disciplines like economics or history which form the body of knowledge that is used in teaching and research. Therefore, the discipline and to a lesser extent the academic organization as a whole tends to become the dominant force in the working life of aca-

demics. The academic community is heavily individualistic and discipline oriented. They share this with various other academic communities across their national boundary. This feature is further reinforced by the fact that academics also hold the view that cross-culturally they share distinctive intellectual tasks and related codes of conduct with their fellow academics in their respective disciplines. In other words, Clark is right in saying that there is a cross-national convergence in certain basic elements of academic organizations and in their value systems. This made universities too, to some extent meta-national and international. This is largely because most Third World universities, if not all of them, were transplants of Western models of higher education.

However, when we closely examine and analyse higher education systems in different Third World countries we see that the basic elements that outlined above have, to a considerable extent, inhibited these Third World academic institutions from being relevant and nationally oriented. Therefore, they were unable to fully integrate themselves into their respective national, political and developmental milieu. This necessitated the direct intervention by governments in many of the Third World countries, in order to precipitate drastic internal changes in the structure and organization of their universities. This was to enable their respective universities not only to reflect national interests but also to cope with the terms of the universities, relevance to the national interest. Perhaps a cross-national analysis like Clark's can only be indulged in if the various higher education systems compared have basically the same deep-rootedness in their own cultures and traditions as well as financial autonomy. However, broadly speaking universities, particularly in the Third World countries, though they too are organizations specifically created and charged to achieve similar goals like universities in post-industrial societies they are not like them for various situation-specific reasons and dynamics. In particular, we see that many Third World universities are not only unable to retain and further reinforce some of the grafted and cherished features and elements that Clark talks about but they are more fundamentally unable to devise norms and values more suitable to their own context. The new cir-

cumstances caused by the state's intervention see them moving towards a distinctive national model, in spite of the peripheral nature of the higher education system. In other words, many Third World countries' higher education systems show a rapid divergence away from the Western model instead of a convergence because of political, ideological, economic and cultural reasons.

This is largely because universities in these countries are heavily dependent on the provision of resources from the state to discharge their goals. Therefore, though academic organizations are indeed unique structures they are part and parcel of the environment from which they have emerged. Thus, in order to understand them we cannot see them as isolates or relatively autonomous sectors of modern society. Instead we have to see and understand them as a phenomenon interdependent with other parts of society and primarily within the boundaries of the society. In the case of many Third World countries the very body politics of the society has played a crucial role in contributing to a divergence of academic organization from retaining action patterns that have been evolved over time and which are cross-national in nature. This environmental pressure on many Third World universities makes Clark's contention that power groups within the higher education system have the capacity not only to produce powerful actors who can shape their immediate work environment but also the power to affect the world, untenable in our view. Also contrary to what Clark claims, it may not be possible for us to systematize the various alternatives of differentiation in the different national higher education systems that are operating in Third World Countries into a handful of pattern. This is largely because each Third World country has its unique national political ideologies, priorities and situation-specific cultural phenomena.

The main methodological and theoretical contention of Clark, that universities because of their specialities and evolution into distinctive action patterns have developed a sectorial hegemony in the society they are rooted, does not seem to be a useful model for a study of academic organisations in the Third World. However, Clark's study has certainly helped to systematically highlight how higher education when organized and

governed in different cultural milieu have evolved certain basic features and elements which are cross-national in character. Certainly in many Third World situations, this in turn will help us to see how these basic elements have changed and will change due to environmental pressures particularly of a political and ideological nature. Though Clark's contribution to the theory of higher education is indeed a major one, it needs further refinement and amplification through case studies in a variety of contexts before it can be applied in a meaningful framework to study higher education systems in Third World countries. Specifically, a continuous underlying emphasis should be placed through out any study with reference towards the strong and growing trend of state intervention and control towards national systems of higher education in most countries throughout the world. This affects the democratization of higher education. Clark is rightly aware of this but has not pursued this in his analysis to the level it deserves emphasis, particularly at this juncture of the development of higher education throughout the world.

V. Selvaratnam

Recurrent Education in Yugoslavia by Niksa Nikola Soljan (Ed.), *Jugoslovenski Pregled, Newspaper and Publishing House, Mose Pij-de 8/1, Belgrade and Institute for Educational Research, Savska cesta 77, Zagreb, Belgrade, 1983 (pp. 116)*

This small volume consists of seven contributions on the different aspects of the recurrent education in Yugoslavia. The two articles, by Suvar and Krajnc, fall in the domain of educational theory and its history. The authors address themselves to the problems of change and development specifically in the context of recurrent education. Of the remaining, there are four contributions in each of the four principal areas namely, socialization (Soljan), psychology, (Pastuovic), economics (Jergovic) and finance (Jasic). Lastly, the paper by Nikolic focusses on the policy issue of social equality. Thus the volume attempts to provide a comprehensive view of the significant issues related to recurrent education in Yugoslavia and deals with these important facets with a view to "fill in the

void in foreign language literature". To a large extent it succeeds in achieving this objective. Any one going through the volume cannot but acquire certain insights into the planning of Yugoslavian education in general and recurrent education in particular.

However, for several reasons the volume is of much more interest for the Indian readers. Firstly, we are interested in comparing our educational experience with theirs. What similarities or dissimilarities education *a la* mixed economy has with the education of socialist Yugoslavia. On this count the results are roughly along the expected lines. Yugoslavia, like India, is also seized of the contemporary educational problems like separation between 'world of learning' and 'world of work', dualism, elitist character of education, the problem of growing bureaucratization, and the scrambling for degrees/certificates as passports to office jobs. However, one must hasten to caution, that the incidence of these phenomena is not of the same order of severity in Yugoslavia as in India. Notwithstanding this the volume indicates several areas wherein the concerns of Yugoslavian educational system, particularly as these relate to recurrent education, are stated with unusual clarity. For example, Suvar says "the changes which the system of education is undergoing in Yugoslavia could be summarized as three processes..... de-etatization of education,democratization of education, and.....de-schooling of education." (p. 115). Or, when he says, "a no less important task of socialism is to separate school from state" (p. 15). Similarly when Jergovic explains, "when the need is emphasised that "workers..... should be the main decision-makers..... (about education), this does not mean that education should simply be subjugated to the technological demands of production" (p. 28). Herein the author is actually pleading for a knowledge-labour relationship. And as elsewhere, the emphasis on recurrent education in Yugoslavia is particularly augmented due to the exponentially growing pace of science and technology in the modern times (p. 31).

Secondly, the contribution of Nikolic is especially instructive for us because of the way it discusses the low-skill jobs, problem

on high-grade labour-substituting technology, productivity and employment. It is not to say that the article lays all the controversies which surround the problem to rest, but the tenor and straight-forward stance of the article speaks volumes about their commitment to development. It is strikingly so when one realizes that discussions on employment, technology and productivity in India tend to be carried out in muted, woolly and grabled manner.

It is probably so because while in Yugoslavia "the solution of employment problems for low complexity jobs and therefore, of education for such jobs, cannot be found apart from the whole complex of relations in society and the overall system of education and training" (p. 47) in India we continue to allocate resources to education arbitrarily in isolation of socio-economic realities. We may be planning for the 'core' economic sector but our super-structure including education is merely an add-on. No wonder then, that the results are usually in the direction other than the intended.

Thirdly, there is this subliminal urge to evaluate the volume with similar publications from the Western countries. Where as the contributors by and large acquit themselves well, the production of the volume, unfortunately, is not of the equal standard. Particularly when it is considered that the volume is meant for outside readers. Here we wish to make two types of observations. Firstly, there is this general apathy towards providing information to the readers. No statistical data has been presented about education, employment or related aspects. It would have added to the exposition if some key quantitative indicators were included in the volume. Secondly, the text of the volume is dull, archaic and full of circumlocutions. One has to get used to it for comprehending the meaning. Since it is a translated work, there is no reason why it could not have been draped in more intelligible language. The way the diagram and sketches are presented, they are hardly aids. Several spelling errors have also crept in the printing.

All told, it is a useful and a good volume.

University Teachers and Their Problems by B.N. Sinha, New Delhi: Puja Publications, 1982, pp VIII+136, Rs. 45/-.

Sinha's *University Teachers and their Problems* is based on the doctoral thesis of the author. It enquires into the problems and attitudes of the University teachers of Bihar. The study covered three broad areas: (1) initial experience in the profession; (2) the problems and attitudes related to the profession; and (3) Problems and attitudes related to social and personal life. The data was collected from five Universities of Bihar viz., Patna (residential) and Bihar, Ranchi, Bhagal Pur and Magadh (Non-residential) from 200 teachers belonging to Arts and Science Faculties through questionnaire and interview. It has been analysed through percentage and chisquare test.

There is a discussion about the historical development of Education in India and Bihar State from the Pre British period to Education in Independent India. The various commissions and committees stressed the need to improve the conditions of service including remuneration of University and College teachers.

The findings indicate that about half of the teachers joined the teaching profession on their own choice with the hope of getting opportunities for further study and research, and also hoped that the teaching profession would be independent, ideal, honest and peaceful. However, a majority of them were disillusioned in their expectation due to: (i) life is not comfortable and dignified in the absence of academic and other facilities; (ii) no recognition of merit, prevalence of favouritism and casteism; (iii) lack of interest and encouragement on the part of authorities and (iv) no respect for teachers in the society. Regarding their self-perception with respect to Government officials and political leaders, teachers have a more favourable image about themselves in relation to social and personal qualities, but they are unhappy and pessimistic as compared to the other two.

The academic difficulties pertain to lack of research facilities, large number of students' absence of independent study room and difficulty caused by the introduction of Hindi as medium of instruction at MA/MSc level.

The personal problems centred around the low salary (average Rs. 413/-) staying in rented houses away from the University and indebtedness. Majority of them had not much educated wives, and thus at times led to adjustment problems. They preferred to stay in families consisting of parents and brothers. They wanted emancipation of women and generally had unfavourable attitude towards religious beliefs.

In their attitude towards society, they felt alienated. They believed honesty and hard work does not pay, they are afraid of being cheated in the market and find difficult to confide in a person.

The association of the faculty teaching, type of universities, rural-urban origin and age (low and high) with modernity (which includes religion, family, marriage and role of women), attitude to society, teaching, academic difficulties and financial strain indicates that type of Universities shows significant association with attitudes towards society, religion and marriage. The teachers of residential University have more favourable attitude towards society. Urbanization (rural-urban) origin has strong association with modernity and attitude towards religion, family, marriage, role of women and financial strain. It shows that the teachers with urban origin are less religious, less family oriented, are against arranged marriages, and are liberal to women in comparison to their rural counterparts. The age shows significant association with all variables except family, and attitude to teaching. It indicates that younger teachers have more modern attitudes, are less religious, more favourable to love marriages and for emancipation of women in comparison to their older counterparts. Older teachers experience greater financial strain but lesser degree of academic difficulties than younger ones.

There are some suggestions indicating how the teaching profession can be made more attractive viz., handsome pay with incentive to work, better scope for promotion, adequate facilities for teaching and research, recognition in the society, residential facilities, no public interference and medical facilities. Another problem is the reasons for student indiscipline. The main reasons are: inadequate hostel accommodation, literary facility and play ground;

absence of goal before the student; poor contacts between teachers and students; political interference, poor administration—favouratism and casteism; and poor family background.

The field work for this study was done sometime in 1965. The reviewer wished that the author had updated the survey of related studies and reinterpreted the data in the light of some relevant findings. On page 33, table I, there is no mention of the number of colleges during 1965. Surprisingly, there is no indication of the present pay scales of the University teachers. There is a need to undertake a large scale study of the problems of teachers working in Uni-

versities, College and Schools, covering also the perception and expectation from the significant persons such as students, parents, administrators and legislatures. It will help in designing programmes for improving the strategies of teaching.

On the whole, it is a nice book, it will be of use to teachers, students of education and administrators. The authorities can have an idea about the difficulties experienced by teachers. The writing is clear and there is a natural flow. The author deserves compliment for his endeavour.

P.C. Bansal

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Our Contributors

Alexander V. Verghese is from Indian Institute of Education, Kothrud, Pune.

Bharat Bhushan is Lecturer in Government College of Education, Jammu Tawi. He has published some papers on Educational Development in the leading journals. His area of interest is Examination Reform.

Brahm Prakash is Senior Fellow and Head of Educational Planning Unit of National Institute of Educational Planning and Administration, New Delhi.

Furqan Qamar is working as Lecturer in Commerce in the Jamia Millia Islamia, New Delhi.

G.M. Patted is working as Reader in the Education Department, Karnatak University. Published twenty research articles. Areas of specialization: Teacher behaviour and micro-teaching.

Harbhajan Singh Singha is Principal of Guru Harkrishan Public School, Vasant Vihar, New Delhi. He has specialised in Mathematics Education and Examination Reform. Besides a number of papers on examination reform published in different journals, he has also written books on different aspects of education.

Karuna Chanana Ahmad is from Zakir Hussain Centre for Educational Studies, School of Social Sciences, Jawaharlal Nehru University, New Delhi.

Kusum K. Premi is Fellow and Head, Educational Planning and Administration, New Delhi. Her area of interest is Educational Planning and Administration, Sociology of Education and History of Education, she has completed three research projects and published several papers.

M.B. Menon is a lecturer in CASE, M.S. University of Baroda. His areas of research are Educational Technology, Higher Education, Science Education and Measurement and Evaluation. He has a number of publications in national and international journals and a monograph to his credit.

M. Devadoss is the Rector of Beschi College, Dindigul, Tamilnadu. He is also the Director, Office of Research and Development, Madurai Jesuit Province, Dindigul, Tamilnadu.

P.C. Bansal is Psychologist at Selection Centre South, Bangalore. His field of interest is in the area of Research Methods, Applied Experimental, Educational and Organisational Psychology.

P.J. Sathiaraj is from the Department of Education, Madurai Kamraj University, Madurai.

P.K. Sahoo is a Research Associate in a project on Evaluation of Adult Education Programme in CASE, M.S. University of Baroda. His special interest is in Non-Formal Education, Distance Education, and Problems of Higher Education in the third world. He has a number of publications in the above areas to his credit.

R. Venkatapathy is a UGC Senior Research Fellow working in the Department of Psychology, Bharathiar University, Coimbatore. His area of specialization include Organizational Behaviour, Entrepreneurial Behaviour and Small Business Organizations. To his credit he has four publications on Entrepreneurs and three publications on organizational Behaviour.

Rais Ahmed is basically a professor of physics with specialization in electronics. He has written widely on problems of education, development, scientific research and planning. He has been Director NCERT, Vice-Chancellor of Kashmir University and now Vice-Chairman of the UGC.

Ruddar Datt is presently Principal of the School of Correspondence Courses and Continuing Education, University of Delhi since 1973. He taught Economics at the University of Panjab and Delhi for over three decades. He has specialized in the Economics of Education and problems of Indian Economy.

Srinivasa Ambirajan is Professor of Economics at the Indian Institute of Technology, Madras and previously taught at the University of Manchester, England, University of Queensland, Brisbane and University of South Wales, Sydney, Australia. He is the author of four books the most recent of which is *Classical Political Economy and British Policy in India*. He has also published numerous papers in learned periodicals both in India and abroad.

Viswanathan Selvaratnam is the Director of Regional Institute of Higher Education and Development in Singapore since 1979. Prior to this he was an Associate Professor at the Faculty of Economics and Public Administration, University of Malaya, Kuala Lumpur, Malaysia.



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